TROPICAL DISEASES BUREAU.

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TUBERCULOSIS IN NATIVE RACES.

UNION OF SOUTH AFRICA. **Report of the Tuberculosis Commission presented to both Houses of Parliament by Command of His Excellency The Governor General.** 1914.—iv + 352 + xvi pp. 1914. Cape Town: Cape Town Times, Ltd., Government Printers. [Price 5*s.* 6*d.*]

This Commission was appointed in 1912 to consider the question of the prevalence and spread of tuberculosis, in its various forms, amongst Europeans, Coloured persons, Natives and Asiatics, in the different areas of the Union. Only a very brief account can here be given of the contents of this interesting and valuable blue-book.

The Commission begin by saying that comparatively little assistance can be got from statistical material as regards the main subject of their report. The Census returns for South Africa, previously to 1904, are not absolutely trustworthy as to population, for various reasons, and the registration of deaths has been and still is, to a certain extent, defective, as regards the numbers of the native population, who form the majority of the inhabitants of South Africa. The registration of the deaths of negroes, when in their native kraals, depends upon the headmen, who formerly were paid a fee of two and sixpence per head for each death registered, but of late, for reasons of economy, this payment has been discontinued, perhaps unfortunately. Certification of the causes of death, in the case of natives, is of course only practicable when the patient has been attended by a European practitioner. In the absence of such statistical assistance, the Commission has had to rely principally on the evidence of witnesses.

It seems agreed that, in his native surroundings, the African negro suffers very little, or not at all, from tuberculosis and, as seen at the present day, it is principally the adult male who is affected. As regards whites, there is no doubt that tuberculosis in the South African colonies was principally imported by young Europeans suffering from phthisis, who, attracted by reports of the climate, came out to South Africa in the hopes of finding the whole country a perfect sanatorium. Another special source of infection has been the immigration of natives of India into Natal. The question of these natives is dealt with under a separate heading in the report; they are at present well under control, both as regards inspection and repatriation, when affected with tuberculosis.

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Passing on to the negro portion of the South African population, it is shown, from a table on page 96 of the report, that this population numbers at the present time about 4,000,000, of whom 1,500,000 are found in the Cape Colony, 950,000 in Natal, 1,200,000 in the Transvaal, and 320,000 in the Orange Free State, while the white population of the four provinces amounts to 1,276,000, and the mixed and other coloured races to 678,000 (Table on page 86), so that the question of tuberculosis, as it affects the coloured men, is by far the most important part of the problem. Tuberculosis, as it affects the negro, is considered in the report under the three main headings of the negro in his kraal, the negro as an employee of the white man above ground, and the negro as a miner in the gold, diamond and coal mines. This branch of the question is handled in the report with great completeness and scientific adequacy, and makes very interesting reading. The negro in his kraal leads a fairly healthy life, does not overwork himself, lives out of doors all day, makes his skin proof against the rain by covering it with grease and ochre, and takes off his blanket and folds it up so as to keep it dry when it is raining, so that he does not suffer from chill. His diet is generally adequate, and almost entirely farinaceous, and he aids his digestion, quite physiologically, by the use of a mild beer, made from maize, containing only from 2 to 4 per cent. of alcohol, of which the Commission speak quite approvingly, and with a noteworthy absence of prejudice. It is only when the native returns to his kraal after contact with the white man, and is infected with tubercle, that trouble begins. His hut is then the place in which he lies ill until he dies, and he spits all over it, as a matter of course. Most unfortunately for the negro, as the report points out, the coloured man has very little natural resistance to tubercular infection. The cases of phthisis are almost all florid in type and rapidly fatal, and it is rare to find in the body of the negro traces of cured consumption, such as are so frequently to be found in the bodies of white men. The Commission attribute this to the absence of immunization, when young, from closed forms of tuberculosis, of the kind that are so common in the European child. Fatal abdominal tuberculosis is also a very common form in the negro adult.

When the negro enters into the service of the white man in towns, he is generally compelled to inhabit a native location, or quarter. The report has some strong things to say about the conditions prevailing in these locations (pages 124–149) and on the tendencies of municipalities to make a profit out of the rents charged to the natives, without doing for them all that might be done from the health point of view. Water-supply and sanitary matters are generally, in these locations, in a very defective condition.

So much has already appeared in print on the effect of mine labour on the constitution and health of the negro, that it seems unnecessary to recapitulate here what the report has to say on that subject. The generally lucrative character of gold and diamond mining permits the companies concerned to do almost all that is necessary for the comfort and welfare of the native labourer, so far as the arduous nature of a miner's employment permits. The Commission do not apparently find very much to criticize in this respect. The native is paid the whole of his wages in cash, and he buys his own food. Unfortunately, some of the native races are stingy in the matter of their diet, and economize unwisely in it, with the result of falling ill, while others,

like the Zulus, feed themselves well. The native is also allowed to choose his own job, according to his liking, without regard to his physical powers, and in this way many a weak man will be found employed at work for which he is not fit. A number of recommendations in this connexion are formulated on pages 208–217 of the report.

Bovine tuberculosis is considered on pages 217–236. It is not a large question in South Africa, except in relation to milking-cows, and pigs kept in connexion with dairies. The negro drinks but little milk. The report terminates with a number of recommendations specially suited to the local conditions of South Africa, but having a general resemblance to those which are found in enquiries of the same kind.

J. B. Nias.

HONEIJ (James A.). **Tuberculosis and Public Health in South Africa.** —*Boston Med. & Surg. Jl.* 1913. Feb. 6. Vol. 168. No. 6. pp. 195–198.

This paper is the outcome of an investigation made during a trip in South Africa. The following distinctive features are noted as characteristic of the disease amongst natives in that country :—

(1) The difficulty of diagnosis in early stages owing to the frequency of other chest diseases such as pneumoconiosis, pneumonia, temporary congestion of the lungs, etc., so prevalent in the mines.

(2) The rapid course of the disease.

(3) The common absence of cough and expectoration in all stages.

In a series of post-mortem examinations in a Native Compound Hospital, a large number had the primary centre of infection in the abdomen, the mesenteric glands being the starting point and the spleen the organ most often grossly infected. The terribly high incidence of tuberculosis amongst miners of European origin and the frequency of secondary tubercular infections in cases of " Miner's Phthisis " (30 per cent.) are mentioned and yet the incidence of tuberculosis amongst natives working in the mines is put at 20 per cent. higher. [Contrast the figures obtained by WATKINS-PITCHFORD and others, below.] The author considers that " it is not unlikely that a large proportion of the so-called rapid acute pulmonary cases of tuberculosis are largely secondary to intestinal infection, due to the bovine tubercle bacillus." [That these cases are originally abdominal and only secondarily in the lungs may well be the case, but the comparative rarity of tuberculosis amongst cattle in South Africa makes the theory of bovine infection less probable.] The greater incidence of tuberculosis amongst natives than amongst Europeans in South Africa may be gathered from the following figures, quoted from the Public Health Department's Report for 1908, dealing with the mortality per mille—Whites, 1·29. Coloured, 6·59.

Turning to bovine tuberculosis, Dr. Honeij states that the veterinary Department records only 328 cases of tuberculosis in 1,980,393 animals passing through the Johannesburg market in two years, no less than 252 of these 328 cases being in pigs. From this it would seem that the disease is very rare in cattle, but further on, he puts it at about 7 per cent. of all milch cows in the Union. [Nathan RAW puts the tubercular infection in English dairy cows at 25 per cent., but still 7 per cent. is a very high figure for cattle kept under the conditions obtaining in

A known quantity of the mixture is poured over, so as to cover the smears, and after 4–5 minutes four times as much water is added and carefully mixed; the preparations are then left for 25 minutes if the stain is fresh, 10 minutes if it is old (a week or more). Wash with water for ½–1 minute and dry with blotting paper. The results obtained with blood are as those with Giemsa. It may be necessary to change the relative quantities of each stain, as specimens vary in their activity; the author has used Grübler's stains. Avoid precipitation by not letting the water act too long. The stain does very well for smears from stools, showing up spirilla and spirochaetes clearly. The cost is small.

A. G. B.

TRIBONDEAU (L.). **Etalement du sang sur lames de verre porte-objets par le "procédé des ciseaux."**—*C. R. Soc. Biol.* 1916. Nov. 18. Vol. 78. No. 18. pp. 1011–1012.

The "scissors method" of making blood smears seem worth description; experience alone will show whether it is superior to other methods, as the author believes.

The blades of the scissors and the slide are first carefully cleaned with alcohol and dried. The blades are separated or opened at a right angle. Take the handle of one blade in the left hand so that the blade points forwards, its cutting edge turned to the left, the plane surface looking upwards and slightly to the right. With the right hand hold the slide by one end between the thumb and index. Touch the exuding drop of blood with the slide close to the index. Hold the slide horizontally with the drop below and rest it at its middle across the cutting edge of the blade. Then push the slide from right to left till the blade touches the drop, move it lightly from side to side till the drop spreads between the slide and blade, and then draw it slowly from left to right so as to spread the blood over the left two-thirds of the slide. Slide and blade must be always in contact and keep their respective orientation. Dry the smear in air. Clean the scissors with cold water and then alcohol. Any instrument with a straight cutting edge serves.

It is claimed that in these smears malarial parasites are not deformed.

A. G. B.

South Africa. An indication of how this figure is arrived at and how it is to be reconciled with the Veterinary Report above quoted is desirable.]

Dr. Honeij makes a series of recommendations as to how the disease might be combated in South Africa, the more general of which are as follows :—

"(1) Keep politics out of all health matters.
"(2) Undertake the proper modern sanitation of its towns and districts.
"(3) Totally prohibit all Asiatics, etc., from a health point of view and handle the native question firmly.
"(4) Secure earnest and good workers, scientifically trained for their campaign against tuberculosis."

S. L. Cummins.

BROCK (B. G.). **Cows' Milk as an Agent in the Spread of Tuberculosis ; especially as it affects South Africa.**—*S. African Med. Rec.* 1916. Apr. 30. Vol. 14. No. 8. pp. 115–124.

The greater part of this article is devoted to the description of a recent paper by Professor DELEPINE on "The Milk Supply as a Causal Factor in Relation to Tuberculosis," which appeared in the *Journal of State Medicine* for November and December 1914 ; but at the end the author supplies a few figures of his own. Out of 72,122 cattle slaughtered at the Johannesburg abattoir in 1912–1913, 94 only were found to be tuberculous, a rate equal to 0·13 per cent., while out of 31,313 pigs 313, or 1 per cent., were infected. Figures are also given for various tuberculin-testings of herds of cattle, obtained from the Principal Veterinary Surgeon of the Union, but it does not appear that any of these were composed exclusively of milch-cows. The author goes on to remark that abdominal tuberculosis is extremely common, in his experience, amongst natives, even though they do not drink milk, provided that they mix with infected human beings.

J. B. N.

WATKINS-PITCHFORD (W.), ORENSTEIN (A. J.) & STEUART (W.). **A Preliminary Enquiry into the Prevalence of Pulmonary Tuberculosis amongt Mine Natives.**—*Med. Jl. of S. Africa.* 1916. Feb. Vol. 11. No. 7. pp. 122–124.

In the words of the authors, "This enquiry was undertaken at the instance of the Rand Mines, Ltd., to ascertain the approximate prevalence of pulmonary tuberculosis amongst their native employees. The report is dated September 1915." It being obviously impossible to examine the whole number of natives employed with any degree of completeness, the investigation was limited to two mines only, the "Crown" and the "Robinson." Out of the 13,000 natives employed at the "Crown" mine, 300 were selected by the overseers for examination on a numerical principle, at the rate of one out of every 20, while from the 2,500 employed at the "Robinson," 100 were similarly taken. The men were first of all carefully examined radiographically at the hospital, and all those who showed normal chests by this method were sent back to work. The remainder were retained for further examination, clinically and bacteriologically. The general result showed that out of the 400 men examined radiographically, only 11 exhibited, positive X-ray evidence of tuberculosis. Out of the 11, 8 presented

equivocal auscultatory signs, and the remaining 3 none. Only one man had tubercle bacilli in his sputum, and he also was the only one who had fever and a respiratory rate above the normal. Three men out of the 11 reacted definitely to tuberculin tests, four equivocally, and four negatively.

The authors consider that these results go far to show that the danger of tuberculosis amongst mine employees is not nearly so great as is often supposed; at the same time they frame a schedule of recommendations for the detection and isolation of cases of tuberculosis.

J. B. N.

Peiper (O.). **Ueber die Verbreitung der Tuberkulose in Deutsch-Ost-Afrika.** [The Spread of Tuberculosis in German East Africa.]—*Arch. f. Schiffs- u. Trop.-Hyg.* 1914. Vol. 18. No. 14. pp. 479–490. With 2 text figs.

The author, who was for several months in 1912 Director of a native hospital at Dar-es-Salaam, comments on the increase of tuberculosis among the negro and East-Indian population of the place. He attributes this spread of the disease to the Indian immigrant, whose domestic habits are far more filthy and insanitary than those of the negro. The negro washes himself, whenever he can find water, wears clean clothes, does not chew betel and expectorate in proportion, builds his huts separately both in town and country, and is generally of good physical stock. The Indian, on the other hand, is, as a rule, physically poorly made, and therefore follows sedentary occupations. He often brings pulmonary consumption with him from his home, generally Bombay, and builds dark and airless houses, which he keeps filthy and overcrowded. As he generally leaves his womenfolk behind him in India, he forms connections with negro women, which are mostly of a temporary character, and in this way he disseminates tuberculosis among the negro population. The author has frequently noticed pulmonary tuberculosis among young negro convicts, and draws attention to the fact that, at Dar-es-Salaam, no proper provision has hitherto been made for the isolation of tubercular prisoners. He insists very forcibly on the necessity for isolating the Indian population altogether in the towns, and for promulgating a special code of building regulations for them. In the year 1903–4 there died in German East Africa of tuberculosis, according to the official returns, only three Europeans and 18 coloured people, but in 1911–12 this number had risen to 17 Europeans. and 90 coloured persons.

In 1913 it was estimated that there were in German East Africa nearly 15,000 coloured persons of non-indigenous origin, of whom the East Indians formed from 5,000–7,000.

J. B. N.

Manteufel (P.). **Vorarbeiten für eine Bekämpfung der Tuberkulose im Schutzgebiet Deutsch-Ostafrika.** [Preliminaries for a Campaign against Tuberculosis in German East Africa.]—*Arch. f. Schiffs- u. Trop.-Hyg.* 1914. Nov. Vol. 18. No. 21. pp. 711–730.

According to the author, the number of cases of tuberculosis medically recognised amongst natives in German East Africa has risen from 18 in the year 1903–1904 to 140 in 1912–1913, while the corresponding

number in Europeans has risen from 2 to 20. There is thus evidence of a rapidly increasing prevalence of the disease in the Protectorate, both amongst natives and Europeans, which calls for active measures. By far the most prevalent form of the disease is pulmonary phthisis. The author has doubts as to the trustworthiness of von Pirquet's reaction as a test for tuberculosis in negroes, in spite of what PEIPER has said in its favour. He has found a higher percentage of positive reactions in children (25 per cent.) than in adults (22 per cent.), which seems anomalous. Similarly with Indians, the figure for children was 30 per cent., as against only 22 per cent. for adults. In 30 per cent. of phthisical patients in whom the diagnosis had been clearly established bacteriologically, the reaction proved negative. Therefore, data as to the prevalence of phthisis amongst negroes based upon cuti-reactions alone, are not absolutely trustworthy in any sense.

The author has a strong opinion as to the necessity for isolating all cases of demonstrated tuberculosis efficiently, not only for prophylaxis, but also as an indispensable preliminary to the effective use of tuberculin therapeutically in the case of natives.

J. B. N.

WUENN. **Bericht über die Tuberkulose am Kilimandjaro.** [Report on Tuberculosis at Kilimanjaro.] — *Arch. f. Schiffs- u. Trop.-Hyg.* 1914. Oct. Vol. 18. No. 21. pp. 731–732.

The author reports an increase in the amount of tuberculosis seen among natives in his district as follows :—

	Pulmonary Tuberculosis.	Joints.
1910–11	2	0
1911–12	5	1
1912–13	8	1
1913–14 (6 months)	11	4

The diagnosis was made certain in all the pulmonary cases by examination of the sputum. The author recommends the immediate establishment of a special hospital, built substantially on the European plan, for the compulsory isolation of all such cases. He remarks that if this is done at once, while the number of cases is still small, there is a good chance of the disease being stamped out. Later on, the cost will be prohibitive. [The population of the district is not given.]

J. B. N.

MUELLER. **Ist die kutane Tuberkulinprobe (Pirquetsche Reaction) als ein brauchbares Hilfsmittel zur Erkennung der Tuberkulose erwachsener Eingeborener anzusehen ?** [Is von Pirquet's Reaction a Trustworthy Means of Diagnosing Tuberculosis in Adult Natives ?].—*Arch. f. Schiffs- u. Trop.-Hyg.* 1914. Oct. Vol. 18. No. 20. pp. 690–691.

The writer ventures to doubt if von Pirquet's reaction is trustworthy as a means of diagnosis in adult African natives. Recently PEIPER has asserted that among negroes a positive reaction is an indication of active tuberculosis. To test this assertion, the author used the test upon 700 unselected patients in the native hospital at Tanga during the year 1912–13. A positive reaction was obtained in 33 per cent., but

in spite of a careful examination of the positively reacting cases, both physically and by means of a microscopic examination of the sputum, signs of active tuberculosis could only be demonstrated in an insignificantly small number. Of 5,612 patients seen by the author between September 1st, 1912 and August 31st, 1913, only 24, that is 0·42 per cent., were found to be tubercular [presumably by other methods], but out of the same number, 600 submitted to von Pirquet's test gave 200 positive results. To sum up, the author thinks that the reaction is quite unreliable as a test for tuberculosis amongst the natives of East Africa.

J. B. N.

Sergent (Edm.) & Foley (H.). **Exploration scientifique du Sahara Constantinois Oued Rir'.—Oued Souf (avril 1912).**—*Bull. Soc. Path. Exot.* 1914. May. Vol. 7. No. 5. pp. 416–429. With 2 text figs & 2 plates.

In the Sahara, where Europeans have not penetrated to any great extent, tuberculosis is relatively rare amongst the natives. In Figuig, cases of the disease are seldom met with and the proportion of positive cutaneous tuberculin reactions is low. In 500 persons tested, there were but 11 per cent. of positives for children between 0 and 15 years of age and 35 per cent. in older persons. But localities appear to differ. The case of the El Oued district is especially interesting as there exist medical records on the diseases of the locality at different periods in past years. Escard makes no mention of tuberculosis amongst the diseases observed by him in 1886. Legrain, in 1893, saw only four cases of surgical tuberculosis in natives during a year's work in the district, and explained its rarity by assuming a "quasi-immunity of the inhabitants of desert regions." In 1911 Cellerier brought to light the high incidence of tuberculosis observed during two years' service in the district. This diversity of opinion led Sergent and Foley to apply tuberculin tests to the native population, and publish their findings on a total of 265 subjects at El Oued in the appended table :—

Tuberculin Reactions in the Population of El-Oued (Oued-Souf).

	Details.	Total from 0 to 5 years.	Total from 6 to 15 years.	Children from 0 to 15 years.	Adults over 15 years.
From 0 to 1 year ..	0 in 3 cases	1 in 10		76 in 151 = 50·3%	
From 2 years ..	0 ,, 4 ,,				
From 3 to 5 years..	1 ,, 3 ,,				
From 6 to 10 years	68 ,, 122 ,,		75 in 141 = 53·1%		
From 11 to 15 years	7 ,, 19 ,,				
From 16 to 30 years	45 ,, 56 ,,				93 in 114 = 81·5%
From 31 to 45 years	22 ,, 27 ,,				
From 46 to 60 years	20 ,, 23 ,,				
Above 60	6 ,, 8 ,,				

Total of 169 positive reactions in 265 cases = 63·7 per cent.

It will be seen that, in this district, the tuberculin tests are positive in a degree comparable to Europe ; a fact which the authors attribute to the migratory habits of the people of El Oued (the Souofa), who go in large numbers each year to Algerian and Tunisian towns on commercial and other business. [Sergent and Foley appear to assume that the want of conformity in the various medical reports quoted depends on a failure to recognise the frequency of the disease by the earlier observers. It is much more probable that the disease has progressively increased there since the advent of Europeans, and that the earlier workers saw few cases because only a few cases then existed. Parallel instances could be cited amongst the natives of India and various parts of Africa. A note as to the clinical type of the disease, whether mild or acute, and as to the case mortality in El Oued would be of interest in this connection.]

S. L. C.

Sergent (Edmond) & Poujol (Jean). **L'infection tuberculeuse chez les indigènes de la région d'Ain-Bessem (Tell Algérois).**—*Bull. Soc. Path. Exot.* 1915. May. Vol. 8. No. 5. pp. 250–251.

The Pasteur Institute of Algeria is pursuing an enquiry as to the prevalence of tuberculosis among the natives of Algeria, by means of the cuti-reaction test. The present paper gives the results for the region of Ain-Bessem, a district of mountains and valleys in the south-west of Kabylia. The children under 16 years of age reacted positively in the proportion of 50 per cent., and the adults over that age in the proportion of 69·4 per cent. The female sex showed a higher proportion of infected cases, namely 70 per cent., as against 66 per cent. for males. The individuals tested, however, were all patients of the local native hospital, who had been taken in for various ailments, and were not selected from the population at large. The total number tested amounted to 273.

J. B. N.

Parrot (L.). **L'infection tuberculeuse dans la région de Gambetta (Hauts-Plateaux Constantinois).**—*Bull. Soc. Path. Exot.* 1915. July. Vol. 8. No. 7. pp. 425–429. With 1 diagram.

An examination of natives in the commune of Souk-Akras (District of Gambetta, Department of Constantine, Algeria), by means of the cuti-reaction tubercular test. The population is agricultural. The percentage of positive reactions among 532 persons tested, of all ages, was 31·1 per cent., the distribution among children being as follows :—

0	to	1	year	of	age	..	..	..	0 per cent.
1	„	2	years		„	..	..	..	10 „
3	„	5	„		„	..	..	..	25 „
6	„	10	„		„	..	..	..	46·6 „
11	„	15	„		„	..	..	..	55 „

The Berbers are slightly less infected than the Arabs in the proportion of 27·7 per cent. as against 35·1.

J. B. N.

Béguet (M.). **Cutiréactions à la tuberculine faites à Alger du 26 avril 1911 au 1er juin 1916.** *Bull. Soc. Path. Exot.* 1916. July. Vol. 9. No. 7. pp. 425–429.

During the period April 26th, 1911 to June 1st, 1916, 1,601 cutaneous tuberculin tests were carried out at the Pasteur Institute at Algiers. The tuberculin used was that of the Institute (*tuberculine brute*) diluted with glycerine to one-quarter strength, and the inoculations were all made by scarification of the skin of the right deltoid region. The results were noted between the third and sixth days.

Of the 1,601 persons tested, 1,446 were Europeans, 122 Mussulman natives, and 33 native Jews.

1. *Europeans.* 455 positive results were observed in 1,446 tests. In children there were 390 positive results out of 1,354 tests, or 28 per cent., and in adults 65 out of 92, or 70·6 per cent.

2. *Native Mussulmans.* 115 children gave 44 positive results, or 38·2 per cent., while 7 adults gave 5 positive results.

3. *Native Jews.* The number tested was so small as to give percentage results of very slight value. One positive result out of 12 was obtained in children up to 1 year of age, 5 out of 14 between 1 to 5 years, and 9 out of 18 from 5 to 15 years. The single adult tested gave a positive result.

J. B. N.

Brewer (Isaac W.). **Tuberculosis in Tropical Countries and the Necessity for Greater Effort to Prevent it.**—*Amer. Jl. Trop. Dis. & Prevent. Med.* 1914. Oct. Vol. 2. No. 4. pp. 270–273.

During a residence of six years in Manila, the author noted the excessive death-rate from tuberculosis and published a paper thereon. In the city of Manila there were 8,244 deaths from tuberculosis in the six years ending June 30th, 1913, of which 1,412 occurred during the last year of the period. Tuberculosis amongst animals in the tropics on the other hand, seems to be very rare. According to Gerhert (*Manila Med. Bull.*, Vol. 1, p. 6) out of 60,000 hogs and 30,000 cattle killed in Manila during 1909, none were tubercular. The same was the case with 94,000 hogs slaughtered in Perak, Selangor and Penang during 1908 and 1909. The author remarks :—

"The situation in the Tropics, then, appears to be that tuberculosis causes a great mortality amongst human beings, but very few animals suffer from it. The cause must be that the human beings are housed during the night in buildings in which there is no ventilation and the animals live in the open air all the year round. My observations in the Tropics cause me to believe that the predisposing causes of tuberculosis there are the same as in temperate regions, but that certain of them are of greater importance. Industrial causes are negligible, but I believe that the mosquito is the greatest predisposing cause. Not that mosquitoes can transmit the disease. The native dreads malaria, and has learned that by keeping his house closed up tightly after dark his family will suffer less from fever. We therefore find that very little fresh air is admitted to the sleeping apartments during the night. I once counted the number of houses with windows open during the night in the city of Manila, and found about 25 per cent. had windows open. This was during the dry season, and without doubt during the rains the number would be much less. To appreciate the foul condition of the air in a native house one has but to make a visit after the family has retired. . . . Just so long as a tropical city is infested with mosquitoes, just so long will the incidence of tuberculosis be high."

J. B. N.

Mathis (L.). **Contribution à l'étude du béribéri. Considerations sur la tuberculose parmi la population indigène du Tonkin.**—*Ann. d'Hyg. et Méd. Colon.* 1914. Apr.-May-June. Vol. 17. No. 2. pp. 483–500. [Tuberculosis. pp. 495-500.]

The author, who is a military surgeon in charge of colonial troops in Caobang [Tonkin], comments on the excessive rarity of infantile tuberculosis, among the indigenous population, as showing that the disease is not deeply rooted amongst the people. Meningitis, spinal caries, lupus, and cutaneous tuberculosis the author has never seen. The disease is chiefly to be met with among natives who have associated with Europeans, such as upper-class boys sent to Europe for their education, soldiers, teachers, servants and female concubines. Natives who have resided in Europe for some time generally bring the germs of phthisis back with them. Pulmonary phthisis is by far the most common form of tuberculosis seen and is often very rapid, especially among the native soldiers; disease of the glands comes next and then that of the joints, especially the ankle-joint.

[For a summary of the beriberi portion see this *Bulletin*, Vol. 5, p.110.]

J. B. N.

Dold (Hermann). **Die Tuberkulose unter der chinesischen und nicht-chinesischen Bevölkerung Schanghais.** [Tuberculosis among the Chinese and non-Chinese Population of Shanghai.]—*Deut. Med. Woch.* 1915. Aug. 26. Vol. 41. No. 35. pp. 1038–1040.

Statistics of the prevalence of tuberculosis in Shanghai, taken from the reports of the Shanghai Health Office (Director, Dr. Stanley). The mean mortality per annum from all causes, from 1900 to 1914, was 17·4 per 1,000 for non-Chinese and 18·2 for Chinese. Of this mortality tuberculosis formed 12·53 per cent. for non-Chinese and 16·72 for Chinese, i.e., 0·22 per 1,000 per annum, and 0·27 per 1,000 per annum respectively. These figures are supported by tables.

J. B. N.

Oyama (I.). **Average Mortality of Tuberculosis taken from Several Insurance Companies in Japan and the Importance of Inspection for Early Diagnosis.**—*Sei-i-Kwai Med. Jl.* 1915. June 10. Vol. 34. No. 6. pp. 34–35.

A collection of the mortality lists of 32 Japanese insurance companies showed an annual mortality, from all causes, of 10·82 per 1,000 in males, and 12·26 in females. The mortality from tuberculosis alone was 22·43 per cent. of the whole (22·83 in males, and 21·36 in females). This high percentage indicates insufficient medical examination. Ten diagnostic points are enumerated to which special attention should be paid by the examiner.

J. B. N.

Sitsen (A. E.). **Aantekeningen over tuberculose in Indië.** [Observations on Tuberculosis in the East Indies.].—*Geneesk. Tijdschr. v. Nederl.-Indië.* 1914. Vol. 54. pp. 346–350.

A short reply to some remarks by Heinemann in a paper contained in the same volume, in which reference is made to a previous paper

by Sitsen. [For a summary of these see this *Bulletin*, Vol. 4, pp. 118-9.] Sitsen points out that the spread of tuberculosis in the East is very largely due to the mixture of races. A half-caste population springs up, which is infected on the European side with such things as tuberculosis. A certain proportion of these half-castes go back to work on the land, and thus infection extends to the native villages.

J. B. N.

Hebbert (R. F.). **Tuberculosis in the Indian Army in France.**—*Indian Med. Gaz.* 1916. Mar. Vol. 51. No. 3. pp. 85–87.

A hastily written paper of small scientific value. Its purport is to draw attention to the fact that a good many men, in the Indian contingents despatched to France, suffered from more or less latent tuberculosis, and developed overt clinical signs on service. The author commences by saying "I am afraid that this article deals with an investigation of a very incomplete character. I myself have been unable to pursue the matter further and collect enough cases, thoroughly investigated and recorded, in order to produce reliable statistics, owing to the sudden withdrawal of my unit from France."

J. B. N.

Salecker. **Die Verbreitung der Tuberkulose auf den Marianen.** [The Distribution of Tuberculosis in the Marianne Archipelago.]—*Arch. f. Schiffs- u. Trop.-Hyg.* 1915. July. Vol. 19. No. 14. pp. 369–376.

The author gives statistics as to the prevalence of tuberculosis amongst natives of the Marianne, or Ladrones, Archipelago, as determined by von Pirquet's test.

The principal inhabitants of these islands are the Chamorros, who at the present time, from intercourse with Spaniards, are nearly all half-breeds. Their standard of living is, proportionately, fairly advanced. Nearly 100 per cent. of the people suffer from ankylostomiasis. Out of 200 Chamorros, of various ages, tested with von Pirquet's test 100 were positive, 88 negative and 2 doubtful. The Chamorros therefore are about as highly infected with tubercle as Europeans.

Statistics are also given for other groups of islanders, as follows :—

1. Out of a number of Caroline Islanders, settled for years in Saipan, the principal island of the Archipelago, 80 were selected of various ages for test, and gave 24 positive, 55 negative, and 1 doubtful result.

2. Out of a number of West Caroline Islanders, recently arrived, on account of the devastation of their native islands by a typhoon in 1907, 97 tested gave 70 positive, 26 negative, and 1 doubtful result.

3. People more recently arrived (in 1911) from the islands of Pisserat and Olol, for the same reason. Of 48 tested, 0 were positive, 47 negative, and 1 doubtful. This was a rather remarkable result, and in contrast with the previous ones. The people themselves were dirty and lazy and mostly occupied in fishing. They suffer largely from ankylostomiasis, and the women are apt to be anaemic in consequence. Many of the women live in the houses of Chamorros, while

the men go to the Chamorros as day-labourers, but without contracting tubercle, so that they seem evidently to possess a relative immunity from tuberculosis.

4. Out of 67 persons belonging to the families of 10 exiled Samoan chiefs, 30, of various ages, were tested; 16 gave positive, 12 negative, and 2 doubtful results.

The general conclusion is that here, as elsewhere, infection with tuberculosis is in proportion to the contact with Europeans.

J. B. N.

KERSTEN (H. E.). **Die Tuberkulose in Kaiser-Wilhelms-Land (Deutsch-Neuguinea).** [Tuberculosis in Kaiser Wilhelm's Land (German New Guinea).].—*Arch. f. Schiffs- u. Trop.-Hyg.* 1915. Feb. Vol. 19. No. 4. pp. 101–108.

The author supplies figures as to the prevalence of tuberculosis among the natives of Kaiser Wilhelm's Land, as determined by PEIPER'S modification of von Pirquet's reaction. The data show very clearly the general immunity of the natives from tuberculosis, unless they have come into contact with whites. Of 44 men from the interior, who had only come into contact with white men on bird-hunting and gold-prospecting expeditions, every one was negative. On the other hand, in villages from which men are impressed for plantation work, the men show a considerable percentage of positive reactions, while the women and children are negative. For example, on the Waria river, 22 children and 39 women were all negative, while of 74 men 17, or 23 per cent. were positive. On the Morobi river, again, 42 children and 17 women were negative, while out of 56 men 15, or 26·8 per cent. gave a positive result. In a village on the coast, only four hours by boat from Frederic William's Harbour, 36 children under 6 years of age all proved negative, but out of 50 children between 6 and 14 years 4, or 8 per cent. were positive. Of 76 adult women in this village 15, or 19·7 per cent. were positive, and 23 out of 85 men = 27 per cent.

The author thinks that these figures show very strikingly the dependence of tuberculosis among natives upon contact with Europeans.

J. B. N.

CLARK (H. C.). **Tuberculosis of the Negro Race as Seen in the Panama Canal Zone.**—*Amer. Jl. Trop. Dis. & Prevent. Med.* 1915. Dec. Vol. 3. No. 6. pp. 331-353.

And with discussion. *Proc. Med. Soc. Isthmian Canal Zone.* 1915. Apr.-Dec. Vol. 8. Pts. 1 & 2. pp. 19–43.

During the period extending from December 11th, 1909 to May 6th, 1915, the author was able to collect notes of 703 cases of tubercular disease from autopsies performed, and surgical material sent for diagnosis at the laboratories of the Ancon Board of Health. He remarks that this number does not include all the cases of tuberculosis that died at the Ancon Hospital during that time, because permission for making an autopsy was sometimes refused, and the bodies of white people are often embalmed for shipment. The greater portion of the

data were obtained from the bodies of negroes. "The natives of the region," it is said, "as a rule seek admission to their own hospital and, therefore, they are not represented by any considerable number in the series." The majority of the white people also who develop tuberculosis within the Canal zone, are repatriated as soon as the disease is detected, but this does not occur to the same extent with negroes, owing to concealment of the disease until its most extreme stages are reached.

The cases are grouped by the author into three categories as follows: (1) fatal tuberculosis, (2) coincident, that is, present in cases where death was due to something else, (3) surgical material.

As regards origin the number of cases were as follows:—

	Fatal.	Coincident.	Surgical.
West Indian negroes ..	393	135	54
African „ ..	1	1	0
Mestizoes ..	47	23	7
White Europeans ..	8	0	11
N. American whites ..	1	3	15
Indian „ ..	1	1	0
Chinese ..	1	0	1
Total	452	163	88

The vast majority of the negroes employed on the Canal zone come from Barbadoes and Jamaica.

As regards ages the distribution was as follows:—

	Fatal.	Coincident.	Surgical.
Under 10 years	16	4	3
10 to 80 years	430	152	76
Over 80	2	0	0
Unknown	4	7	9

and as regards sex:—

Males	399	135	72
Females	53	28	16

As regards the nature of the lesion in fatal cases the numbers were as follows:—

Disseminated tuberculosis	221
Pulmonary „	153
Acute miliary „	41
Abdominal „	14
Meningeal „	11
Other organs	6
Genito-urinary system	3
Bones and joints	2
Lymphatic glands	1
	452

It is remarked:—

"The commonest visceral lesion found in the fatal cases was, of course, the pulmonary one. The usual ulceration and cavity-formation was observed but there was little evidence in any of the cases of extensive fibrosis, such as is frequently seen in the white race, except the obliterative

process in the pleural sacs. Large or small areas of tuberculous pneumonia were frequently seen. Extensive haemorrhage into the pulmonary cavities was noted at the time of the autopsy in 24 cases, and had been clinically noted in many of the others. Rupture of the lung was found at autopsy in 16 cases. . . . Hydrothorax, pneumothorax and empyema were rather common features. An astonishing number of cases possessed tubercular ulcers in the lower half of the small bowel and in the caecum and ascending portion of the large bowel as well as the appendix."

In the discussion which followed, Dr. P. M. Ashburn gave the following figures as to the death-rates from tuberculosis from the Sanitary Department of the Isthmian Canal Commission. In 1906, when the total population was 66,000, the deaths from tuberculosis were 4·24 per thousand. The large importation of healthy young labourers began at that time. In 1907, with a population of 102,000 the death-rate from tuberculosis was 2·89 per thousand, and this fall continued as the population increased, until 1911, when the population reached a maximum of 156,000. In this year the tuberculosis death-rate reached its minimum, namely 1·82 per thousand. Now, as the population is decreasing, the death-rate is increasing, reaching 2·58 per thousand in 1914. This is due to the closing up of the Zone towns and to the crowding into cities "where the wage-scale of the labourer is only 25 dollars per month, and his room-rent 5, 6 or 7 dollars per month and market prices are high. It can be readily seen that he cannot feed his family well and surround them with the conditions to enable them to resist either the infection or the spread of tuberculosis." Dr. Herrick remarked that the figures given for surgical tuberculosis by no means represented the whole extent of its prevalence. Dr. H. P. Carter said that the 60,000 people in Panama live in 3,000 houses, making 20 persons per house. As many as 11 have been found living in one room. The population have a fear of night air, and all windows and doors are closely shut at night. Promiscuous spitting and general uncleanness co-operate in spreading the disease. The tuberculin test for cows is practically not done at all. Tuberculosis of cattle is, however, practically unknown on the Isthmus. Dr. R. C. Connor gave corroborative evidence. Were it not for the deportation of tubercular whites, the mortality would be much higher.

J. B. N.

Michie (H. Clay). **A Tuberculous Survey of an Alaska Eskimo Village—Using Children under the Age of 15 Years as an Index.**—*Med. Record.* 1916. Oct. 14. Vol. 90. No. 16. pp. 663–666. With 4 text-figs.

A brief account of the testing of a small number of Eskimo school-children with von Pirquet's tuberculin test. Out of 46 Eskimo children attending a native school, 26 were taken for test, with the result of finding a percentage of 61·53 positive, 23·05 negative and 15·36 suspicious. Eight other Eskimo children attending a better class school for whites, when tested in the same way, gave a percentage of 62·5 positive, 12·5 negative, and 25·0 suspicious. The sputum of 13 out of the 26 children was then examined microscopically for tubercle bacilli and *M. tetragenus*, when three out of 13 showed T. B. and six *tetragenus*.

The conditions of life of the Eskimo in their underground dwellings are shown by the author to be extremely favourable to the propagation of infection.

J. B. N.

Steiner (L.). **Tuberculose et soleil tropical.**—*Rev. Méd. de la Suisse Romande.* 1916. Oct. 20. Vol. 37. No. 10. pp. 653–659.

The author, having practised for 20 years at Sourabaya in Java, has been led to notice the rarity of tubercular affections amongst natives in the tropics, other than pulmonary tuberculosis. He attributes this to the light clothing worn, and to the constant exposure of the body to the sun, especially in the case of children. A hint is thus given for the sun-treatment of tuberculosis, as already practised at Leysin and other stations in Switzerland. It is noted that the Javanese population hardly ever drink cow's milk, and that the dairy industry is hardly known, which may be an additional factor in the rarity of osseous and glandular tuberculosis. The domestic conditions of the Javanese, on the other hand, favour the propagation of pulmonary phthisis, as for example, dirty houses, the habit of expectorating, and personal uncleanliness. Bathing is resorted to for purposes of coolness rather than for washing in the proper sense of the word.

J. B. N.

HEAT STROKE.

PUNTONI (Vittorio). **L'eziologia e la profilassi del colpo di sole.** [Etiology and Prophylaxis of Sunstroke.]—*Ann. d'Igiene Sperimentale.* 1915. Vol. 25. (N. Ser.). No. 1–2. pp. 151–166. With 2 figs.

The author points out that it is necessary to distinguish clearly between sunstroke and heatstroke. Heatstroke is often caused merely by a very hot humid atmosphere aided by unsuitable clothing, but the action of direct rays of the sun is necessary for sunstroke. In heatstroke the etiological factor acts upon the whole, or a great part, of the surface of the skin and nearly always upon the respiratory organs; but in sunstroke it suffices if the sun's rays act upon the uncovered head or spine.

Heatstroke can be roughly explained by an increase of the body temperature, due either to diminution in loss or to great increase in the heat of the skin and respiratory organs. In sunstroke it is a question of the direct action of solar rays upon the meninges or upon the cerebro-spinal nervous tissue; any rise of temperature in this case is secondary to the lesions of the heat regulating centres.

The precise solar rays responsible for sunstroke is a question still debated; a brief summary of the literature bearing on the subject is given.

A series of experiments was undertaken to ascertain to which rays the cranium is diathermal. In the place of the objective in a camera was fixed a disc of cranium taken from the fronto-parietal region of a human corpse in a good state of preservation. The disc was the size of a crown piece and about 10 mm. in thickness, it included all the adjacent tissues from the dura mater to the skin, and contained a certain quantity of venous blood. By means of this simple apparatus the behaviour of the various solar rays in traversing the cranial disc was studied. It was found that the human cranium is diathermal to yellow-red and violet-ultraviolet rays, but absorbs the red and green-blue rays.

A further series of experiments was undertaken to determine which rays produced sunstroke. Albino rats, which are very susceptible to sunstroke, were exposed to the sun, the body being protected, but the head and neck uncovered. Death took place in ten to fifteen minutes and under tropical sun it would have been much quicker. The symptoms were convulsive jerkings which gradually increased to violent convulsions; the respiration and pulse became accelerated. Later the symptoms of excitement subsided, the respiration became faint and irregular and soon the animal succumbed. The neck muscles were rigid and slight meningeal congestion was observed. If an animal were withdrawn from the sun during the period of excitement the convulsive movements continued, it sneezed frequently, the ears were intensely red, the eyes congested and food was refused. These symptoms lasted 24–48 hours and were sometimes followed by death, in which case meningeal hyperaemia was found.

Animals were then exposed to the action of rays of two different kinds—the one rich in violet-ultraviolet rays and the other in red-yellow rays. The former evoked similar symptoms to those observed in rats exposed to the sun, death occurring in 25–30 minutes. Exposure for $1\frac{1}{2}$ hours to rays of the second kind was necessary to cause death and the symptoms did not resemble those of sunstroke.

The author holds that sunstroke is caused by the violet-ultraviolet rays and not by the red-yellow rays. The yellow rays however facilitate matters as they produce heat.

Workers exposed to the action of red-yellow rays (in steel works, etc.), although subject to great heat, exhibit no symptoms of sunstroke, but symptoms similar to those of sunstroke have been observed to follow the action of electric light, rich in violet and ultraviolet rays.

Red-yellow rays are only harmful when accompanied by heat, but sunstroke can be contracted on the ice at low temperatures, by exposure of the head to the sun for only a few seconds and by a filiform ray piercing the badly placed ventilation hole of a tropical helmet. Moreover since manifestations of sunstroke frequently appear many hours after exposure they cannot be due to calorific rays, which produce immediate action.

In discussing the question of prophylaxis the author points out that the first defence against violet and ultra-violet rays is found in the black pigment of the skin, which transforms the various forms of energy of the sun's rays into heat. Prophylactic measures should consist in intercepting firstly the violet-ultraviolet rays which cause sunstroke and secondly the yellow-red rays which facilitate sunstroke. Clothing of a green colour absorbs both the former and the latter; the disadvantage of the absorbent properties of green clothing can be obviated by covering it with white material. The eyes should also be well protected preferably with green glasses.

The conclusions are :—

The tissues which compose the cranium (from the dura mater to the skin) are diathermal both to the yellow-red and to the violet-ultraviolet rays, but they absorb the red and green-blue rays.

Radiations rich in violet-ultraviolet rays (quartz lamp with mercurial vapour) produce in the white rat—a very susceptible animal—all the symptoms of sunstroke.

On the other hand, those abounding in red-yellow rays are ineffective.

It must therefore be remembered that sunstroke is brought about by the action of the violet-ultraviolet rays upon the meninges and the cerebral substance.

At the same time, one must not completely neglect the red-yellow rays, which facilitate the photo-chemical action of the violet-ultraviolet rays by means of the heat which they produce.

With regard to prophylaxis against sunstroke, it is well to protect the susceptible parts (head, neck and spine) with green clothing, which absorbs the violet-ultra violet rays as well as the red-yellow, letting pass the green rays only, which are harmless because they are arrested altogether by the tissues of the cranium.

Since in practice it is necessary to combine the prophylaxis against sunstroke with that against heatstroke, it is advisable to cover the green, heat-absorbing clothing with white material, which is well known to possess the greatest reflecting properties.

The eyes should be protected by means of coloured glasses, and these again, for the above reasons, should be green.

W. Yorke.

Bruno (G.). **Quattro casi di colpo di calore sulla R. nave "S. Caboto."** [Four Cases of Heatstroke on the S.S. "Caboto."]—*Ann. Med. Nav. e Colon.* 1915. June. Year 21. Vol. 1. No. 6. pp. 654–655.

This paper describes four cases of heatstroke—three on board and one ashore—during the stay the ship made at Hankow in 1914.

The most interesting case was that of the chief quartermaster who had arteriosclerosis as a result of chronic alcoholism and syphilis. After duty on the bridge, he had an attack of fever, headache and vomiting. The conjunctivae were injected but the pupils reacted to light. The temperature was 38° C., the pulse 96 and the respirations 24. There was no loss of consciousness. Application of ice to the head, cold sponging and cardiac stimulants overcame the vomiting but had no effect upon the temperature which rose to 39·5° C. Notwithstanding the rise of temperature the patient appeared better. Three days later the condition was aggravated by a cardiac and respiratory crisis. The face and extremities became cyanotic, there was Cheyne Stokes breathing, the pulse was very frequent and irregular and in spite of treatment the patient died a few minutes later.

Three other cases, which occurred about the same time, presented analogous but less severe symptoms and treatment was followed by a rapid and complete cure.

The author states that the attacks are explained by the external conditions. A high temperature of 41° C. was accompanied by a remarkable degree of atmospheric humidity and almost complete immobility of the air.

The fatal case emphasises the importance of the organic lesions produced by alcoholism and syphilis on the course of heatstroke.

W. Y.

Hill (E. W.). **Report on a Case of Sunstroke.**—*Proc. Med. Assoc. Isthmian Canal Zone.* Oct. 1912 to Mar. 1913 [1914]. Vol. 5. Pt. 2. pp. 47–51.

This is the third authentic case of sunstroke in the Panama Isthmus since the occupation by the Americans. A man was brought into the dispensary in an unconscious condition, the only history obtainable at the time being that he was seen to put his hands to his head, stagger and fall to the ground unconscious; on the way to the dispensary he had several convulsions. Subsequently it was learned that he had been on the Isthmus but ten days and had been perfectly well up to the time of the attack, in fact on the day of the attack he had been credited with ten hours work. On admission the skin was hot and dry; the pulse too rapid to count, thin and compressible; the pupils were contracted and did not react to light; there were convulsive muscular movements; the respirations were 46 and shallow; the face was congested and purple in colour; the axillary temperature was 108·5° and the rectal 110° F. A diagnosis of thermic fever was made. All the clothes were removed, ice was applied to the thorax and abdomen and dry massage was performed to bring the superheated internal blood to the surface. An ice-water spray was thrown on the head. Under this treatment the rectal temperature fell in 14 minutes from

110° to 104° F. During this period a cold water enema at 60–70°F. was given. Occasional convulsions occurred. In 27 minutes the rectal temperature had fallen to 101·5° F.; at this point all measures for the reduction of temperature save an ice cap to the head were suspended, and the patient removed to a dry cot and covered with a sheet. In 33 minutes the rectal temperature was 100° F., the patient became partially conscious and was given small quantities of ice water by the mouth. A perfect recovery was made.

The author points out that four varieties of sunstroke are recognised: (1) Heat exhaustion; (2) Heat prostration; (3) Thermic fever; and (4) Heat cramp. The remedial measures required vary considerably in the different forms. While stimulants and measures to combat shock are indicated in heat exhaustion and prostration nothing, as a rule, seems to be demanded in thermic fever other than the application of cold, venesection and massage. The general indications are four in number: reduction of temperature, measures against cardiac failure, treatment of complications and of sequelae.

The paper closes with a brief discussion of the more recent work on the pathology of heatstroke.

W. Y.

Neilson (J. L.). **Two Cases of Thermic Fever occurring in the Fireroom of a Battleship.**—*U. S. Naval Med. Bull.* 1913. Oct. Vol. 7. No. 4. pp. 579–583.

This paper records the clinical observations made in two cases of thermic fever which occurred amongst the midshipmen on board the U.S.S. "Illinois." After preliminary instruction midshipmen in the U.S. Navy are required to stand 2-hour watches every second day in the fire and engine room actually performing the duties of machinists, oilers, water tenders, firemen and coal passers under the direction of two commissioned officers and a few experienced members of the crew. The two young men were overcome one afternoon when the outside temperature was 85°F. A detailed account of the symptoms of each case is recorded.

The first had almost completed his watch when he complained that he felt weak and dizzy and could not see well. He was told to leave the engine room at once. When seen by the medical officer a few minutes later he was unconscious, cyanotic and pulseless. The respirations were hardly perceptible and the pupils widely dilated. Whilst the clothes were being removed he had a slight convulsion, and the respirations ceased. A minute or so of artificial respiration started the breathing and the pulse returned; the skin became hot, dry and about the colour of a mild degree of sunburn. Ice was applied to the head and the body sponged with iced water and a quart of ice water given by the rectum. The patient remained unconscious for about 20 minutes; half an hour later his temperature had fallen from 107·5° to 99·8° F. He was then dried and put to bed, and made an uninterrupted recovery.

The second case became ill after he had been on duty in the fireroom for $1\frac{1}{4}$ hours. Whilst being removed to the sick bay he had a severe convulsion. When seen by the medical officer a few minutes later his skin was hot, dry and pallid except for a slight cyanosis of the face.

The respirations were slow, regular and shallow; the pulse was 160 with marked incompressibility. The pupils were almost pin point in size, and the lids fluttering; the rectal temperature was 107° F. Ice compresses were applied to the head and ice sponges and friction to the body were immediately administered and shortly afterwards a quart of ice water was given rectally. About a pint of salt solution was given by hypodermoclysis. One hour later the rectal temperature was 101° F., the pulse 130 and of very high tension and the respirations shallow and slow. The patient was dried and put to bed, lying naked in the wake of an electric fan. The coma was so deep that there was not the slightest response to supra-orbital pressure, nor even a hastening of respiration upon forcible dilation of the sphincter. An hour later as conditions had not improved about six ounces of blood were withdrawn. Shortly afterwards the pulse became slower and more compressible and the cyanosis disappeared. The first signs of returning consciousness were observed about five hours after the first symptoms appeared but it was not until three hours later that he responded to questions. He also made a good recovery. In both cases the urine collected next day contained a trace of albumin.

W. Y.

LIAN (Camille). **De l'insolation. Forme méningée, progressive—Forme cardiaque.**—*Presse Méd.* 1915. Sept. 16. Vol. 23. No. 43. pp. 354–356.

After quotation from the "classical study" of VAILLARD, in which it is stated that lumbar puncture has revealed a meningeal reaction in several cases of severe insolation, either simple hypertension of the fluid, or more rarely leucocytosis, the author describes the "progressive meningeal form" which he has studied in three cases.

Two workmen working in distinct localities in the sun in France, in a period of great heat, suffered from headache, prostration, and loss of appetite. Each day the symptoms increased and after a week each was admitted to hospital. There was intense headache, vasor-motor symptoms, slight infrequency of pulse, and rise of temperature to 39°, falling gradually to normal after a week. Lumbar puncture gave exit in jets to a clear fluid, with no increase of cells. In a third case the symptoms were more marked, there being slight Kernig's sign and coma for about 20 hours. In the progressive meningeal form the delay is not only in the onset but in the development of symptoms. They do not disappear for two weeks. Such cases might be taken for acute meningitis.

The cardiac form was seen in a territorial soldier of 42, who was digging a trench on a hot day and had to climb a steep hill to reach his camp. His symptoms, which are detailed, were almost exclusively circulatory. There was acute dilatation of the heart with an extremely marked arrhythmia. He was an agricultural labourer who had never been ill, but there was probably heart weakness for he had suffered before from palpitation. It is remarked that insolation produces a real diminution of the strength of the myocardium. The paper closes with some therapeutic deductions.

A. G. B.

Bittorf (A.). **Ueber Folgezustände des Hitzschlags.** [The After Effects of Heat Stroke.]—*München. Med. Woch.* 1915. June 22. Vol. 62. No. 25. p. 862.

A short account of the subsequent history of cases of heatstroke seen in the garrison at Leipsig in the summer of 1914. Those that ended fatally are not described. The other patients complained at first of headache and great lassitude, and in many instances there was nervous tachycardia with weakness of the voice. Later, in the majority, severe hysterical convulsions came on suddenly. True epilepsy never developed. All slowly improved, and by the end of April 1915 the last was passed for garrison duty. Details of individual symptoms are given; such as dumbness, abasia and astasia, tachypnoea, stammering, disturbances of sensation, attacks of tetany, all of which were regarded as hysterical. In fact every severe case was followed by such symptoms. It is suggested that severe damage to the brain in heatstroke leads to changes of an hysterical character. The prognosis in all cases is relatively unfavourable. No figures are given in this note.

A. G. B.

Bram (Israel). **The Treatment of Sunstroke and Heat Prostration.**—*New York Med. Jl.* 1914. Sept. 19. Vol. 100. No. 19. Whole No. 1867. pp. 570–572.

The author thinks it dangerous to employ the terms sunstroke and heat prostration interchangeably "as this implies similarity in treatment." He tabulates the differences as follows:—

Sunstroke.	Heat Prostration.
1. History of direct exposure to the sun's rays.	1. History of exposure to excessive heat, usually indoors.
2. Onset sudden, often with convulsions or paralysis.	2. Onset gradual; no convulsions or paralysis, but prodromata (headache, dizziness, nausea, etc.).
3. Usually complete unconsciousness.	3. Rarely, loss of consciousness.
4. Skin hot, dry, and flushed.	4. Skin cool, pale, and clammy.
5. Injected conjunctiva, contracted pupils.	5. Conjunctiva pale, pupils dilated or normal.
6. Temperature very high (105° to 113° F.).	6. Temperature normal, subnormal or slightly elevated (100° to 102° F.).
7. Pulse high and bounding.	7. Pulse weak and thready.
8. Respiration irregular, often Cheyne-Stokes in type.	8. Respiration shallow and sighing.
9. Course brief, with guarded prognosis, terminating in death or recovery in from a few hours to a day or more.	9. Course greater in duration, prognosis favourable, usually terminating in recovery within a few days.
10. Complications and sequelae not uncommon.	10. Recovery usually uninterrupted and complete.

The bulk of the paper is devoted to details of treatment and does not lend itself to condensation. Under the heading prophylactic treatment, "indulgence in alcoholic practices" is condemned and "the same danger exists in persons habituated to the immoderate use of tea, coffee, or tobacco, a fact which seems to have been overlooked by the profession," these substances bringing about a condition of irritability and instability of the functions of the nervous system. The treatment of sunstroke includes ice applications, venesection in certain cases, hypodermic injection of ether or camphor in cardiac weakness, and of atropine sulphate for oedema of the lungs. Digitalis may also be useful. The employment of pilocarpine is condemned. In meningeal irritation quinine and salicylic acid are to be avoided. Antipyretic drugs are contraindicated. In the event of delirium or convulsions sodium bromide, sixty grains per rectum, whiffs of amyl nitrite, or chloroform "to the verge of anaesthesia" should be tried. Heat prostration in children, the author thinks, is often overlooked. He does not say how many cases he has treated by the methods advocated.

A. G. B.

Hanson (George C.). **Chloroform in the Treatment of Insolation.**—*Jl. Amer. Med. Assoc.* 1915. Oct. 9. Vol. 65. No. 15. p. 1277.

In this note the author describes the beneficial action of inhalations of chloroform in three cases suffering from insolation.

In each case the symptoms were well marked, unconsciousness, high temperature (106–107° F.) and frequent pulse. The patients were stripped of their clothes, laid on a bed and chloroform was cautiously given by inhalation. During the first half hour though no other treatment was given definite improvement in condition was noted. Subsequently, ordinary treatment was administered with uneventful recovery.

W. Y.

AMOEBIASIS AND DYSENTERY.

Amoebiasis.

Job (E.) & Hirtzmann (L.). **Les modes de propagation de la dysenterie amibienne au Maroc.**—*Bull. et Mém. Soc. Méd. des Hôpit. de Paris.* 1916. July 27. Vol. 32. 3rd Ser. No. 26. pp. 1309–1320.

The disease is wide-spread in Morocco, 600 cases occurring in 31 months. There are few deaths, but many invalids result, which is a serious question economically on account of the number of patients who have to be repatriated. Hepatitis also is a frequent complication. These considerations apply especially to East Morocco. The vegetative form of the amoeba is almost innocuous from the point of view of infection as it is a very delicate organism and is easily killed by the gastric juice. It is the cystic form which constitutes the real danger and it is, therefore, not acute cases of amoebic dysentery but convalescents that are a source of danger to others. Of 290 convalescents examined 85 were found to be carriers. Cysts are commonest in patients who have had several attacks. Infected water is a common source of infection. Flies are also undoubtedly important agents in spreading the infection, as they readily pass directly from latrines to food [see this Bulletin, Vol. 9, p. 99]. Another danger in Morocco is the consumption of raw beans. Owing to the unhygienic conditions prevailing the soil must be badly contaminated with infected faeces, and it is only to be expected that this must in turn contaminate vegetables grown upon it. The beans being unsterilised by cooking may form one of the most important methods of spread. In the last year or two better hygienic conditions, such as obtain for instance at Casablanca, have reduced the incidence of the disease to some extent.

E. E. Atkin.

Fischer (W.). **Ueber die Amöbendysenterie in Shanghai.** [Amoebic Dysentery in Shanghai.]—*Deut. Arch. f. Klin. Med.* 1915. Oct. 29. Vol. 118. No. 2. pp. 129–147. With 2 charts.

The European population of the international settlement in Shanghai numbered about 8,000 in 1913. During the 14-year period 1900-1913 about 271 deaths occurred amongst the European inhabitants of the settlement, from dysentery. This number is arrived at by including cases diagnosed as chronic diarrhoea, and liver abscess. In the same period there were 632 deaths from intestinal diseases, which is estimated to be about a sixth of the deaths from all causes.

The cases collected by Fischer occurred in the practices of the German doctors in Shanghai. Of 262 cases of intestinal infections investigated amoebae were found in 67 (25 per cent.) In addition to this, amoebae or their cysts were found in two out of 25 cases without any suspicion of dysentery. Similar conditions prevailed also in Tsingtau.

In Shanghai most of the cases of dysentery occur from the end of September to December. The very severe cases are most frequent

however in July, August and September. The fatality from dysentery and chronic diarrhoea, which is also probably dysentery, is highest in September, as shown in the chart.

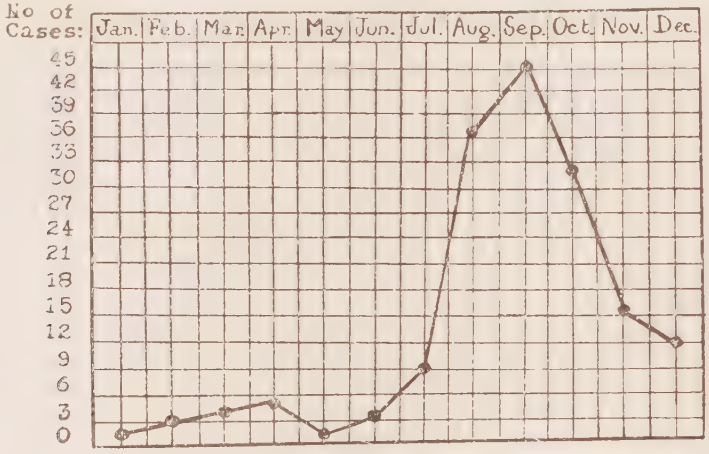

Chart showing deaths from dysentery and chronic diarrhœa per mensem in Shanghai.

The majority of the fatal cases occur during the hottest months of the year, but the greatest incidence of the disease takes place after the hottest period is past and also after the time of maximum relative humidity.

Fulminating cases occur, a fact which is not sufficiently widely recognised. They often pass almost pure blood and a diagnosis of dysentery may not immediately suggest itself. No treatment is of avail and a fatal issue is almost invariable. They occur only in the hottest months, in people who have never before had an attack of dysentery.

Bacillary dysentery being uncommon in Shanghai, the association of *E. histolytica* with Shiga's bacillus is not often seen.

E. E. A.

Job (E.) & Hirtzmann (L.). **Pathogénie et histo-pathologie de l'ulcération dans la dysenterie amibienne.**—*Bull. et Mém. Soc. Méd. des Hôpit. de Paris.* 1916. July 27. Vol. 32. 3rd Ser. No. 25-26. pp. 1250–1257. With 5 text-figs.

The ulcerative process is always too advanced in man at death for a study of its complete evolution. This paper is based on observations on young cats infected with *E. histolytica* artificially.

Some of the sections showed traces of the entrance of the amoeba into the cells of the mucosa. It appears to lie in a small cavity, and it is easily seen as it takes a deeper tint than the tissues when stained with haematoxylin. The nucleus of the infected cell is situated near its base, and occasionally shows a concavity when the amoeba is in close proximity. The parasite begins to grow here, accompanied by a reaction on the part of the cell which hypertrophies, squeezing the cells in the immediate vicinity. The nucleus of the cell undergoes a change,

its chromatin becoming segregated into small unequal granules which stain badly. Mitotic figures occur in the adjacent cells. An infiltration of polymorphonuclear leucocytes takes place in the surrounding tissue.

The amoeba eventually completely occupies the place of the cell, either totally devouring it or expelling the residue, which takes up a position above it in the lumen of the gland. Red blood cells are usually not ingested at this stage. When several parasites grow alongside one another desquamation of the cells *en bloc* may ensue. The vessels dilate and red corpuscles invade the tissues, where they are phagocyted. The process of destruction spreads through the muscular mucosa to the submucosa. The intestinal epithelium in the affected areas having disappeared, most of the amoebae fall into the lumen of the gut. Some however, and these are the small types, penetrate inwards. Whether the interglandular tissue of the mucosa becomes extensively infected or not depends upon the position of the developing amoeba. If in a cell near the deep end of a gland, direct infection of the submucosa through the muscularis mucosa is easy, but if its site is a cell situated at the side of the gland lumen the distance is considerable and the surrounding connective tissue is more liable to infection.

A secondary bacterial infection of the necrotic areas is an inevitable consequence of the process.

The lesions are generally very limited, forming islands in normal tissue, which explains the fact that the amoebae are not present in every sample of faeces examined. Considerable oedema of the submucosa is found. In the absence of a secondary infection it is not common to meet with chromatolysis of the nuclei of the leucocytes, which is such a characteristic feature of bacterial infections. The muscularis mucosa is partly destroyed. The cellular elements surrounding the invaded areas undergo a coagulation necrosis and it is when these break down that the greatest number of amoebae are found in the stools.

E. E. A.

Reinhard (P.). **Röntgenbefunde bei klinischer und experimenteller Amöbenruhr.** [Revelations of X Rays in Clinical and Experimental Amoebic Dysentery.] — *Arch. f. Schiffs- u. Trop.-Hyg.* 1916. June. Vol. 20. No. 11. pp. 245–260. With 3 plates.

The substance used to produce shadows was barium sulphate. After a preliminary clearing of the bowel, injections of $BaSO_4$, 300 gm., together with Bolus alba, 100 gm., in 1·5 litres of water were given, as well as Günther's barium sulphate broth by the mouth.

The site of election of amoebae in the bowel is naturally where the flow of the liquid contents is least, namely at the ileo-caecal valve and flexures. Insufficiency of the valve in cases of amoebic dysentery is a fairly common occurrence, the sign of which is tenderness on pressure in the appendix region. Stenosis is a frequent accompaniment of insufficiency, leading to delay in the passage of the contents of the small into the large gut. This can be readily demonstrated experimentally in the cat, which animal can be easily infected with *E. histolytica*. Normally nearly all the barium should have passed into the large intestine in three hours; in five hours the small intestine should be

quite clear. In the case of an amoebic cat it is found that all the barium is still in the small intestine after three hours. Amongst other lesions detected by the same method was a conical contraction of the caecum.

E. E. A.

Dobell (Clifford). **Incidence and Treatment of *Entamoeba histolytica* Infection at Walton Hospital.**—*Brit. Med. Jl.* 1916. Nov. 4. pp. 612–616.

This careful investigation deals with 200 New Zealanders from Egypt and Gallipoli who were admitted to the Walton Hospital. Of these 130 were suffering from dysentery, enteric or other intestinal ailments, or from debility following these. The remaining 70 had been taken in for wounds or affections other than intestinal ones. The following table shows the protozoal findings :—

Number of men infected with :—

Entamoeba histolytica	22 = 11 %
Entamoeba coli	84 = 40·9 %
Giardia (= *Lamblia*) *intestinalis*	40 = 19·5 %
Chilomastix (= *Tetramitus*) *mesnili*	16 = 7·8 %
Trichomonas hominis	5 = 2·4 %
Isospora sp.	1 = 0·48%

Of the 22 cases in which *E. histolytica* was found, 11 were intestinal cases, and 11 wounded patients and those suffering from non-intestinal complaints. The next table gives further details :—

Percentages of Cases Infected with E. histolytica.

Intestinal cases..	8.2 per cent.
Dysenteric cases	10·0 ,,
Non-dysenteric cases	11·8 ,,
Non-intestinal cases	1·57 ,,

The salient point brought out by these examinations is that all the men returning from an amoebic district ought to be examined whether there is any suspicion of dysentery or not. Most of the men infected with the amoeba had definite histories of dysentery or diarrhoea. This failed however in at least two cases, who must therefore be regarded as contact carriers.

Twenty-one men infected with *E. histolytica* were treated with subcutaneous injections of emetine hydrochloride. A course of 12 to 14 gr. did not cure 14 of them ; the remaining 7 were discharged as cured, examination of the stools proving negative for 2 3 weeks *after* treatment.

Next emetine bismuth iodide was tried, being administered by the mouth in cachets containing 1 gr., thrice daily until 36 gr. had been taken. There is a tendency to vomiting in some cases but tolerance is soon established if full doses are persisted with. All cases suffered more or less from diarrhoea, which should be looked upon as a salutary condition, effecting a removal of amoebae. Eleven of the 14 men who had not been cured by a course of emetine hydrochloride were subjected to this treatment. The other three received a second

course of the hydrochloride so as to figure as controls. The results exceeded expectations. All the men who took the double iodide were more or less certainly cured while the three controls, who repeated their course of subcutaneous emetine hydrochloride, were none of them cured. Furthermore two of these controls (the third was not available, having left hospital) were subsequently cured by a course of emetine bismuth iodide, proving up to the hilt the superiority of the new preparation over the old.

The double iodide had no destructive action on other protozoa which happened to accompany *E. histolytica*. Although *E. coli* sometimes disappears from the faeces during treatment it almost invariably returns afterwards. On Lamblia and Chilomastix the drug had no effect whatever.

E. E. A.

Jepps (Margaret W.). **Note on Some Examinations and Treatments for *Entamoeba histolytica* Infections.** — *Brit. Med. Jl.* 1916. Nov. 4. pp. 616–617.

The patients all came from the Mediterranean area. Out of a number of cases the data concerning 23 were sufficient to allow of a detailed analysis. The first Table shows the 9 cases which were discharged as cured by hypodermic injections of emetine hydrochloride.

Table I.

Case No.	Treatment.			Consecutive Negative Examinations.	No.
	Begun.	Ended.	Amount given.	Dates (1916).	
15	May 21	June 1	12 gr.	June 2, 9, 17 (relapsed June 21)	3
	July 6	July 15	10 gr.	July 15, 24, 27, 29, 31	5
18	Aug. 5	Aug. 17	12 gr.	Aug. 10, 16, 19, 23, 25, 28, 30; Sept. 1, 4, 6, 8, 11.	12
19	Aug. 5	Aug. 16	12 gr.	Aug. 14, 15, 18, 20, 23, 25, 28, 30; Sept. 1, 4, 6, 8.	12
29	Aug. 9	Aug. 20	12 gr.	Aug. 16, 23, 25, 28; Sept. 1, 4, 6, 8.	8
31	July 24	Aug. 2	10 gr.	Aug. 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 28.	11
35	Aug. 5	Aug. 16	12 gr.	Aug. 16, 18, 20, 22, 24, 26, 29, 31; Sept. 2, 5, 7.	11
36	Aug. 9	Aug. 25	14 gr.	Aug. 29, 31; Sept. 2, 7, 9, 12, 14, 16, 19, 21.	10
37	July 24	Aug. 2	10 gr.	July 31; Aug. 7, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 29, 31.	14

Twelve cases relapsed before the end of three weeks' examinations after treatment as shown by Table II.

TABLE II.

Case No.	Treatment.			Consecutive Negative Examinations.		Date of Relapse (1916).
	Begun.	Ended.	Amount given.	Dates (1916).	No.	
12	Aug. 5	Aug. 16	12 gr.	Aug. 5, 7, 9.	3	Aug. 8 [sic]
16	Aug. 5	Aug. 16	12 gr.	Aug. 12, 15, 23, 25, 28, 30.	6	Sept. 1
21	Aug. 5	Aug. 16	12 gr.	Aug. 14, 16, 19.	3	Aug. 8 [sic]
23	Aug. 6	Aug. 17	12 gr.	Aug. 22, 26, 29, 31	4	Sept. 2
25	July 24	Aug. 2	10 gr.	July 31; Aug. 1, 5, 7, 9, 11, 13, 15, 19.	9	Aug. 21
28	July 24	Aug. 2	10 gr.	July 31	1	Aug. 7
32	Aug. 5	Aug. 16	12 gr.	Aug. 7, 8, 14, 16, 18, 20, 24, 26, 29.	9	Aug. 31
33	Aug. 5	Aug. 16	12 gr.	Aug. 14, 16, 19, 21, 23, 24, 25.	7	Aug. 28
34	Aug. 5	Aug. 16	12 gr.	Aug. 8, 10, 12, 14, 16, 18, 20.	7	Aug. 22
38	Aug. 10	Aug. 21	12 gr.	Aug. 19, 21, 23, 25; Sept. 1, 4.	6	Sept. 6
39	Aug. 12	Aug. 23	12 gr.	Aug. 24, 26, 29	3	Aug. 31
40	Aug. 12	Aug. 23	12 gr.	Aug. 17, 18, 21, 23, 25, 28.	6	Aug. 30

Two other cases did not receive full treatment with emetine and one of them relapsed within the arbitrary period of three weeks after the last injection.

TABLE III.

Case No.	Treatment.			Consecutive Negative Examinations.		Date of Relapse.
	Begun.	Ended.	Amount given.	Dates (1916).	No.	
17	June 29	July 8	3½ gr.	June 5, 17, 20, 27; July 3, 8, 14.	7	
30	June 25	July 19	8 gr.	July 22, 24, 27, 31; Aug. 7, 8.	6	Aug. 10

No. 17 was only observed for a week after cessation of treatment so that it is not known whether he relapsed or not.

After the injection of at least 10 gr. of emetine 12 out of 21 cases were certainly not permanently freed from *E. histolytica*. The next table gives some additional information.

TABLE IV.

Case No.	After Emetine.	Day when First Found Negative.	Date of Detection of Relapse after End of Treatment.
15	12 gr.	First after end of treatment	Twentieth day.
16	12 gr.	Eighth day of treatment	Sixteenth day.
21	12 gr.	Tenth day of treatment	Fourth day.
23	12 gr.	Fifth after end of treatment*	Sixteenth day.
25	10 gr.	Eighth day of treatment	Nineteenth day.
28	10 gr.	Eighth day of treatment	Fifth day.
32	12 gr.	Third day of treatment	Fifteenth day.
33	12 gr.	Tenth day of treatment	Twelfth day.
34	12 gr.	Fourth day of treatment	Sixth day.
38	12 gr.	Tenth day of treatment	Sixteenth day.
39	12 gr.	First after end of treatment	Eighth day.
40	12 gr.	Sixth day of treatment	Seventh day.

* Not examined between eleventh day of treatment and this date.

E. E. A.

BAYMA (Theodore). **Traitement de l'amibiase par l'adrénaline.**—*Ann. Paulistas de Med. e Cirurg.* 1916. Aug. Vol. 7. No. 2. pp. 28–40.

The author has now had experience of 60 cases of amoebic dysentery treated with adrenalin. Of these 28 were acute and were cured after 2–15 days' treatment; the remaining 32 chronic cases, some of which were of more than two years' standing, were cured in 2–30 days. Young and old alike were treated in this way. Children under 1 year received up to 1 mgm. in 24 hours (5 drops four times a day), while in the case of adults 20–30 drops were administered every two hours. In the old-standing obstinate cases a large daily intestinal wash was prescribed as well. Intolerance to the drug was met with only twice—30 drops caused immediate gastralgic pains in two women.

Having had such good results in ordinary amoebic dysentery with adrenalin, Bayma was anxious to see if the treatment would also be useful in cases of liver abscess. The first case cited was that of a woman of 30. Chocolate-coloured pus, containing amoebae, was aspirated from her liver. She was started with 10 drops of adrenalin (Parke Davis 1 : 1,000 solution) every two hours for 14 hours when the dose was increased to 30 drops. The dysenteric condition (blood and tenesmus) rapidly ameliorated, the bulging of the thoracic wall decreased, and the patient was cured in 22 days.

Adrenalin was given in conjunction with emetine in another case of liver abscess which had been opened by the surgeon. The patient left the hospital cured, 20 days after the operation. The part taken by the adrenalin in the cure of this case is of course inconclusive. In the author's opinion adrenalin can transform a "living" into a "dead" abscess in the same way as emetine does, but it cannot bring about the absorption of the pus and should therefore always be accompanied by surgical measures.

Another patient who was benefited by adrenalin was a man who developed pain and tenderness in the right iliac fossa. He had dysentery, and amoebae were found in his stools. The case was diagnosed as appendicitis complicating dysentery. Adrenalin by the mouth soon reduced the number of stools and the patient got quite well without surgical interference.

The combined administration of two drugs is becoming increasingly popular, at any rate in diseases due to protozoa and spirochaetes where there is reason to believe drug-fast strains occur. For instance most authorities are now in favour of combining mercury and salvarsan in the treatment of syphilis. Many instances are now on record of amoebic dysentery cases which are refractory to emetine, and therefore the simultaneous administration of emetine and adrenalin is advisable.

[Some of the cases refractory to emetine have lately been cured by the new double iodide of bismuth and emetine which is now on its trial, so that the theory of emetine-fastness has not such a sound foundation as was originally assumed.]

E. E. A.

Calle (Miguel M.). **La creosota en la disenteria cronica amibiana.** [Creosote in Amoebic Dysentery.]—*Revista Clinica.* Medellin. 1916. Sept. Vol. 1. No. 2. pp. 73–75.

A recommendation to use rectal injections of creosote, in cases of amoebic dysentery in which, for any reason, emetine cannot be employed, or has been employed unsuccessfully. Notes are given of the case of a woman, who had been treated unsuccessfully for amoebic dysentery with injections of emetine. The patient was ordered five doses of 5 gm. of sulphate of soda, at half an hour's interval, and was then directed to take every morning, after washing out the bowel with an injection of warm water, the following enema :—

Beechwood creosote	4 gm.
Glycerine	15 „
Warm water to	500 cc.

On this treatment the daily stools fell from 17 in the day and 5 in the night, to two in the day and none in the night, after four injections. Improvement began after the second injection, and at the end of 10 days the patient felt perfectly well. The treatment was followed up, by way of precaution, with 10 subcutaneous injections of emetine of 4 cgm. each.

The author has employed the same treatment in three other cases, with complete success in two and a failure in the third, the latter for special reasons.

J. B. N.

Justi (K.). **Amöbenruhr und Amöbenabszess der Leber mit Durchbruch in die Lunge.** [Amoebic Dysentery and Amoebic Abscess of the Liver bursting into the Lung.]—*Arch. f. Schiffs- u. Trop.-Hyg.* 1916. June. Vol. 20. No. 12. pp. 268–274. With 2 text-figs.

An account of a single case of liver abscess. A brief history of the patient is as follows. The liver abscess was opened at the close of the

year 1912. In the course of the next year a periproctitic abscess developed and was drained. About February 1915 he began to be troubled with a cough. On July 30th puncture of the right chest showed the presence of thick sterile pus. The leucocyte count was 9,700, 80 per cent. of which were polymorphonuclears. A rib was resected on August 6th allowing the escape of much green pus from the pleural cavity. The patient died on August 20th.

No amoebae were found in the pus of the empyema post mortem, nor in scrapings from the abscess wall. Sections were made which showed *E. histolytica* in the abscess wall, and in the submucosa of the large gut at the site of the ulcerated areas, as well as in the dilated veins and capillaries. In some of the sections the amoebae could be seen traversing the vessel walls. [No mention is made of the employment of emetine in addition to surgical measures. It has been shown that it is essential to combine both methods of treatment in order to obtain a radical cure.]

E. E. A.

Wemyss (H. L. Watson). **A Case of Amoebic Abscess of the Liver.**—*Edin. Med. Jl.* 1916. Oct. Vol. 17. No. 4. pp. 255–258.

This man had an attack of dysentery in Gallipoli from which he temporarily rallied, two injections of emetine being administered. Later he went sick again with what was diagnosed as typhoid fever on account of the positive Widal reaction, but he had been recently inoculated against this disease, so that the conclusion drawn may have been erroneous, especially as no typhoid bacilli could be isolated from the blood, faeces or urine. He complained of pain in the upper abdomen and he was jaundiced. He was invalided home, and eventually developed a liver abscess which contained chocolate-coloured pus and was evacuated. A few doses of emetine were given and the patient made an uneventful recovery. Although the case was undoubtedly amoebic in origin, the organism could not be demonstrated either in the pus or in the wall of the abscess after careful search.

E. E. A.

Mathis (C.) & Mercier (L.). i. **Les kystes d'***Entamoeba dysenteriae.*—*C.R. Soc. Biol.* 1916. Nov. 18. Vol. 79. No. 18. pp. 980–982.

ii. **La division simple chez** *Entamoeba dysenteriae.*—*Ibid.* pp. 982–984.

iii. **L'Amibe de la Dysenterie,** *Entamoeba dysenteriae,* **Councilman et Lafleur 1891.**—*Bull. Inst. Pasteur.* 1916. Nov. 15. Vol. 14. No. 21. pp. 641–663. With 2 figs.

The first paper deals with the cysts of the entamoeba of dysentery, which the authors term *E. dysenteriae.* In order to determine the sizes of the cysts, a hundred were examined in stained preparations. In such preparations the cysts were found to vary from 8μ to 12·5μ. The living fresh cysts gave extreme dimensions of 10μ to 15μ, the most common forms being 12·5μ and 14μ. Cysts of 10μ in stained preparations are considered to be microcysts, and those of 11·5μ macrocysts. Vacuoles are present in the cytoplasm at the commencement of encystment. The chromidium, which is of cytoplasmic origin, is

formed by the aggregation of granules around the vacuoles which gradually disappear. After the formation of the chromidia, the nucleus undergoes mitosis and, after a time, the daughter nuclei divide again, four nuclei being thus formed. It is remarked that the chromidium is not a constant feature, being absent in about ten per cent. of the cysts, both uninucleate and tetranucleate cysts showing the absence of this structure. No sexual phenomena have been seen, but it is suggested that the cysts termed microcysts and macrocysts may represent gametocytes.

The second paper relates to division of *Entamoeba dysenteriae*, as the excitant of amoebic dysentery is termed. The authors consider that the Entamoebae of the *tetragena* type and the corresponding cysts alone take part in the cyclical development of the parasite, and that the *histolytica* forms are aberrant, appearing at the crises. Division of the *tetragena* form within the host is said to be by a mesomitosis, and not a mitosis as stated by Job and Hirtzmann. Contrary to the opinions of many authors, Mathis and Mercier think that dysenteric Entamoebae of the type *histolytica* have lost the power to multiply, as they have not found division forms in the stools examined [but this does not agree with their diagrammatic life-cycle in their third paper]. The presence of large numbers of *histolytica* forms in stools is explained by assuming the transformation of *tetragena* forms into *histolytica* forms. The authors have not seen schizogonic parasites and do not believe that schizogony occurs.

The third paper deals in a general manner with the amoeba of dysentery, and covers some of the same ground as the preceding ones. The authors prefer the generic name Entamoeba to Endamoeba, and attempt to re-establish the specific name *dysenteriae* for the pathogenic Entamoeba. It may be stated that the arguments advanced are not very convincing, and are in part based on the assumption that the entamoeba originally observed by Lösch was the pathogenic form which he named *E. coli*. Consequent on the confusion with the organism now known as *E. coli*, the name of the species is given as *dysenteriae*. According to the authors the genus Entamoeba is polyphyletic. An account is given of the *histolytica* and of the *tetragena* forms of the Entamoeba. The motile *tetragena* form shows a vesicular nucleus about 4μ to 5μ. A karyosome with a centriole is present. Division is simple and is mesomitotic. The cysts are characterised by the presence of four nuclei and chromidia, and the sweeping generalisation that their presence in faeces allows of the "unhesitating" diagnosis of amoebic dysentery is made. [The authors have overlooked the fact that sometimes *E. coli* has four nuclei and occasionally contains chromidial masses.] The *histolytica* form is said to occur only in muco-sanguinolent stools and in abscesses of amoebic origin. The motile form is usually from 25μ to 40μ, and contains phagocytosed erythrocytes. [These enclosures are not always present.] After the digestion of the red cells, the endoplasm shows a greenish tint which, it is suggested, may be due to a pigment such as biliverdin. The degeneration forms of *E. histolytica* described by Schaudinn as "spores" are discussed.

The authors consider differential characteristics between *Entamoeba coli* and *E. histolytica*. Their views are those generally held, and relate to the ingestion of red blood corpuscles, separation of ectoplasm and

endoplasm, the structure of the nucleus and the differences in the cysts. The authors are of the opinion that the Entamoebae are best distinguished in their cystic stages, and they point out –as is well known—that the larger size of the cysts of *E. coli*, the greater thickness of the cyst wall and the presence of a larger number of nuclei (8) are useful distinguishing features. As dimensions for cysts of *E. coli* they mention 16μ to 19·5μ diameter, for those of *E. histolytica* they mention 10μ to 15μ diameter in the fresh state. [In their figure of a cyst of *E. coli* they do not represent a thick cyst wall.]

Dysenteric stools containing cysts were kept in moist chambers and attempts were made to cultivate the entamoeba, but no additions to our knowledge resulted therefrom. It is also noted that in experimental infections in animals it is the *histolytica* type of the parasite which multiplies. Yet the authors think that there is no evolution, properly so-called, of the parasite in animals but only a simple culture *in vivo*, in which degeneration forms abound, though it is acknowledged that cysts have been obtained in the cat by certain workers.

In conclusion, the authors consider the life-cycle of *E. histolytica* as a whole. They think that four amoebulae emerge from ripe cysts [but see this *Bulletin*, Vol. 8, pp. 116–117]. They find that *histolytica* forms preponderate in bloodstained mucus, while *tetragena* forms occur in faecal matter only. They think that the monkey as an experimental animal would be more likely than the cat to show the normal life-cycle of the parasite. A life-cycle diagram is given, but this contains nothing essentially new.

[Regarding the specific name *dysenteriae* given by Councilman and Lafleur in 1891, it is interesting to note that Calkins considers that the name was inadequate and insufficient to identify the organism with which they were working. Craig states that *dysenteriae* is considered by Stiles to be a synonym of *coli*.]

A. Porter.

Macfie (J. W. Scott). **Observations on Urinary Amoebiasis.**—*Ann. Trop. Med. & Parasit.* 1916. Dec. 16. Vol. 10. No. 3. pp. 291–304.

The author, after giving an historical survey of the cases of amoebae found in urine previously reported, describes three cases seen by him at Accra, Gold Coast Colony. Two of the patients were negroes, and little is known of them, as only a single specimen of urine from each of them was examined, though these specimens contained amoebae.

The third case was that of a European and was brought, already diagnosed, to the author's notice by Dr. C. V. Le Fanu, who also provided notes of the case. The patient was an official, 27 years of age, who in May last complained of frequency of micturition and the passage of white deposit with his urine. In the urinary deposit pus cells, epithelial cells, erythrocytes and amoebae were found at various times. He had never suffered from dysentery, but had had "a slight diarrhoea in November, 1914, lasting for eight days." Although there were reasons for suspecting gonorrhoea, gonococci were never found. On rectal examination, both seminal vesicles were found to be enlarged, but the testicles and epididymis were normal. Treatment by rectal massage of the vesiculae and hypodermic injection of $\frac{1}{2}$ gr. of emetine

daily was given, and the patient was cured by the third week in August. [The total amount of emetine given is not apparent.]

The morphology of the parasite is described in detail. The amoebae ranged in size from 7μ to 33μ, a few reaching 40μ. Cysts containing as many as four nuclei were found. The nucleus, as found in the various parasites, varied somewhat, but it was usually of the type seen in *Entamoeba tetragena*, with karyosome and centriole. The author believes that the amoebae "cannot be differentiated from *Entamoeba histolytica* (*tetragena*)." As regards the probable mode of infection, the author thinks that the parasites may have come from the large intestine of the patient.

Reference is made in the paper to the bodies seen by Ward, Coles and Friel and commented on by Fantham [see this *Bulletin*, Vol. 8, p. 118].

A. P.

Brug (S. L.). **Pigment und andere Einschlüsse in Dysenterieamöben.** [Pigment and Other Inclusions in Dysenteric Amoebae.]—*Arch. f. Schiffs- u. Trop.-Hyg.* 1916. Sept. Vol. 20. No. 18. pp. 433–436. With 4 figs.

The author, a medical officer in the Netherlands East Indies army, has found certain pigmented amoebae in sections of the wall of a liver abscess. These were not constant throughout the section, being abundant in some parts and sparse in others. At first the pigment was considered to be the remains of erythrocytes, but comparison with amoebae containing numerous erythrocytes only recently ingested showed that there were differences between them and the pigment. Their staining reactions were also different.

Pigment masses were found to be present in some of the cells of a normal liver. The author thought that it was possible that the amoebae had phagocytosed the pigment of the liver cells after the death of the latter, owing to the action of a histological ferment. It was improbable that they could have ingested entire liver cells. In the case examined, many phagocytosed leucocytes were found in the amoebae, and the degree of digestion was shown by the nuclei of the lymphocytes lying in a large vacuole. The author finally considers that it is possible that the pigment in the amoebae has been derived from ingested leucocytes which originally obtained it from liver cells.

Sometimes a large crescentic pigmented mass has been seen in some amoebae. It is suggested that this is either a large chromidium or an agglomeration of phagocytosed erythrocytes.

The drawings show the appearance presented by these pigmented amoebae.

A. P.

Mitchell (O. W. H.), Culpepper (W. L.) & Ayer (W. D.). *Endameba buccalis* **in the Mouths of Institutional Children.**—*Jl. Med. Res.* 1916. Sept. Vol. 35. No. 1. Whole No. 158. pp. 51–53.

During the winter of 1915–16, 1,000 smears from the mouths of 500 children, inmates of an orphans' home and an institution for the

feeble-minded, were examined by the authors for *Entamoeba buccalis*. Superficial and deep smears were taken, the former without any preliminary cleansing of the gums. The gums were classified as (i) normal, (ii) receding, and (iii) receding, spongy and bleeding. Very few of the third group were true cases of pyorrhoea, suppurative gingivitis more accurately describing the conditions. Of children with normal gums, 58 contained *E. buccalis* and 211 were negative. The organisms were thus present in 21·6 per cent. In cases with receding gums, 61 were infected and 37 free, there being thus 62·2 per cent. infected. Of those with receding, spongy bleeding gums, 99 were infected and 34 uninfected. These results are very like those obtained by Williams and colleagues [see this *Bulletin*, Vol. 7, pp. 205–6] and a table is given comparing the two sets of results. There was little difference in the findings among children of different ages.

A large proportion of normal mouths were thus found to contain *E. buccalis*. "The more marked the pathological condition of the gums the greater are the chances of finding endamebae." Of the 218 children with positive results, the organisms were present in only superficial smears in 63, in only deep smears in 23, and in both superficial and deep smears in 132. In the latter case, the organisms were usually more numerous in superficial smears. The authors think that perhaps *E. buccalis* is of doubtful pathogenicity. [The name *E. gingivalis* has now superseded that of *E. buccalis* on the score of priority.]

A. P.

Hecker (F.). **Experimental Studies with *Endamoeba* Gros.**—*Jl. Infect. Dis.* 1916. Nov. Vol. 19. No. 5. pp. 729-732.

The author has made a study of entamoebae found in the human mouth. In order to obtain the organisms, a loop of cotton wool was passed into the deepest portion of the root socket of a diseased tooth, and was moved upwards, downwards and laterally, so as to collect specimens from the entire area of disease. Care was taken to avoid bleeding, as then the specimens would contain erythrocytes and not pus. The loop was withdrawn and the contents mixed with a drop of sterile salt solution on a clean slide, covered and examined microscopically. By a special procedure, amoebae were isolated, after which each was washed three to five times in sterile broth to remove debris and bacteria. When the entamoebae were considered clean, they were removed and inoculated into the "deepest portion of the gingiva" of a guinea-pig. Six guinea-pigs so treated were examined daily. "With the exception of three guinea-pigs which showed slight inflammation of the gingivae on the second and third days respectively, none of the animals disclosed inflammation, pus, or presence of entamebas during a period of 84 days following the inoculation."

The author also injected active entamoebae into the gingival space around the "six lower anterior teeth and the four anterior upper teeth" of his own mouth, the teeth previously being free from entamoebae. The largest number of entamoebae injected was 14.

Microscopic examinations were made after the seventh day, inoculations being continued at five-day intervals. From March 12th to August 1st, 1916, "no inflammation of the gum had occurred, and no pus, and no entamebas had been found microscopically." From his experiments the author cannot accept the view that the entamoebae found in the pus at the root of a tooth affected with pyorrhoea alveolaris are the etiologic agents of the malady.

A. P.

Bacillary Dysentery.

Delille (Armand), Paisseau & Lemaire. **Note sur une épidémie de dysenterie bacillaire à l'armée d'Orient.**—*Bull. et Mém. Soc. Méd. Hôpit. de Paris.* 1916. July 27. Vol. 32. 3rd Ser. No. 25-26. pp. 1302–1308.

During May and June 1916 an epidemic of bacillary dysentery occurred amongst the troops at Salonika. In 240 examinations of faeces, *E. histolytica* was never found, nor even *E. coli*. In 133 cases nothing beyond *B. coli* or its close allies was found. *B. dysenteriae* Shiga was isolated 11 times. In addition to these, types were met with which fermented the same sugars as Flexner, Shiga or His respectively but accompanied by the production of gas. No agglutination of these bacilli was obtained with specific sera. They were obtained from typical dysenteric stools and the authors look upon them as approaching closely the dysentery group of organisms. If they were known certainly to be pathogenic, they might be called para-dysentery bacilli.

Bacilli the characters of which deviated considerably from those of the dysentery group, were neglected.

A bacillus answering to the description of Morgan's No. 1 was isolated seven times.

[The authors wax enthusiastic over the finding of Morgan's bacillus, and other bacilli closely allied to the dysentery group, but it is necessary to be extremely cautious in regarding them as pathogenic. The most important piece of information is lacking, namely whether the patient's serum agglutinated the respective bacillus.]

E. E. A.

Levaditi (C.) & Nicolas (G.). **Recherches sur la dysenterie.**—*C. R. Soc. Biol.* 1916. Oct. 21. Vol. 79. No. 16. pp. 839–843.

At the garrison of Orleans a dysentery epidemic broke out. Bacteriological examinations were made on 110 stools, from 25 of which Gram negative, non-motile bacilli were isolated which did not ferment lactose. Of this number only 12 could be relegated to known types—*B. dysenteriae* Y, 9 cases; *B. dysenteriae* Strong, 3 cases. The remainder were put out of court by their agglutination reactions or by their action on sugars and neutral red agar.

It was found that each bacillus isolated which fermented sugar according to the Y or Strong types and in addition did not change neutral red, showed all the other characters of the group to which it

belonged. It was agglutinated not only by the test serum, but also by the serum of dysentery convalescents. On the other hand the bacilli which gave anomalous sugar reactions *and all of which without exception fermented neutral red agar* were agglutinated neither by the serum of the patient from whom they were isolated, nor by the serum of other dysentery patients or convalescents. They had no relation whatever to the disease.

E. E. A.

Fejes (Ludwig). **Ueber Typhus und Ruhrmischinfektion.** [Mixed Typhoid and Dysentery Infections.] — *Med. Klinik.* 1916. Sept. 10. Vol. 12. No. 37. pp. 974–976.

Patients who are simultaneously infected with both typhoid and dysentery bacilli, exhibit clinical manifestations of dysentery first, on account of the shorter incubation period. In the cases observed by Fejes the usual course of events was that during the third week of the dysentery attack, that is to say, when the symptoms were becoming mild, the typhoid infection started with a rise of temperature. The patients on the whole did well, which was doubtless due to the fact that the dysentery was mostly of the Flexner type. Very different however was the result when the sequence was inverted, namely when dysentery followed or rather appeared during an attack of typhoid fever. All the cases in which the diagnosis was supported by bacteriological investigation terminated fatally, irrespective of the type of dysentery. With the onset of the second infection the temperature suddenly becomes subnormal, bradycardia is followed by tachycardia, in a word collapse sets in, which rapidly terminates in death.

E. E. A.

Schiemann (O.). **Ueber Schwierigkeiten bei der serologischen Diagnose der Shiga-Kruse-Ruhr und über Modifikationen der Technik der Agglutination.** [Difficulties in the Serological Diagnosis of Shiga-Kruse Dysentery and Modifications of the Technique of Agglutination.]—*Berlin. Klin. Woch.* 1916. Sept. 25. Vol. 53. No. 39. pp. 1079–1080.

There has lately been much discussion as to the possibility of a prophylactic typhoid or cholera inoculation inducing the formation of group agglutinins for Shiga bacilli. Apropos of this the author remarks that he has tested a number of dysentery patients' sera on two different Shiga strains. One of these strains showed group agglutination with a typhoid serum (from horse). It is necessary therefore to choose a Shiga strain which does not exhibit such group agglutination by testing it on many different normal and immune sera.

As the result of testing a large number of patients' sera on typhoid, paratyphoid B, Flexner Y and Shiga bacilli the author concludes that a 1 : 100 dilution of the serum is necessary before a probable diagnosis of Shiga dysentery can be entertained, whenever typhoid or paratyphoid

agglutinins are also present (whether by inoculation or not). A 1 : 50 titer may be due to group agglutinins. A positive Shiga agglutination therefore always has a greater value if the simultaneous presence of typhoid and paratyphoid agglutinins can be excluded, but on account of the extra labour involved this is seldom practicable in routine work .

Another point lately insisted on by several authors is that specific Shiga agglutination is always in the form of coarse clumps. A fine grade agglutination is to be neglected as unspecific. More recently Jacobitz has reported coarse clumping in a 1 : 50 dilution in a number of cases which were not dysentery. This question is therefore not yet finally settled. The author points out that the distinction between coarse and fine clumping is only valid when the tube is not shaken. The ordinary efforts to dislodge the sedimented bacteria are sufficient to break up the big irregular clumps. A rotating motion which is just enough to project the sediment into the body of the fluid again, is all that can be allowed.

Out of 23 Shiga strains tested 21 showed the phenomenon of coarse clumping ; the other two only exhibited fine clumping, so that it is not universal. In addition a definite optimum was obtained at a dilution of 1 : 50 with the patient's serum used. Dilutions of 1 : 10 and 1 : 20 gave distinctly less coarse clumping.

E. E. A.

Meyer (F.). **Ruhr und Ruhrbehandlung.** [Dysentery and its Treatment.]—*Berlin. Klin. Woch.* 1916. Sept. 25. Vol. 53. No. 39, pp. 1070–1076.

The author divides his cases into two main groups. The first group consisted of mild cases in East Prussia. Stomach symptoms were to the fore, no deaths were recorded and in most instances no dysentery bacilli were isolated. In all probability this epidemic was not true dysentery at all but was due to sudden change of diet coupled with exposure or some other such factor.

The second group occurred in Russia and the cases were of a more serious type. They could be subdivided into mild, medium and severe. The mild cases differed from those of the previous group, chiefly in the absence of stomach symptoms. About a third of them developed fever. Flexner-Y bacilli were isolated from the faeces of 10 of the cases. All the stools contained slime : 70 per cent. contained blood also. Amongst the severe cases the usual complications were observed, such as rheumatism, polyneuritis, nephritis, myocarditis, bladder trouble, pleuritis and periproctitis with abscess formation. The rheumatism often persisted for 4–5 months.

Anti-dysentery serum was used. To be effective it must be given early—during the first, or at latest second week. Only intramuscular or intravenous injections were resorted to. The serum is absorbed much quicker by the muscular route than when injected under the skin and as time is a matter of great importance this method should be given precedence. The dose used was 50 cc. or in bad cases 100 cc. The intravenous route is the ideal and was used where possible, 20 cc.

or even 30 cc. of serum being injected at one time. On account of the danger of anaphylaxis it can only be employed, however, in patients who have never previously had an injection of horse serum (diphtheria antitoxin, antistreptococcic serum, tetanus antitoxin, etc.). The large number of medicaments recommended for the local treatment of dysentery shows that there is no sovereign remedy from this point of view.

E. E. A.

Mixed and Unclassed Dysentery.

Fraser (Henry). **The Bacteriology of Dysentery in Malaya.**—*Studies from the Inst. Med. Res. Federated Malay States.* No. 13. 44 pp. 1916. Singapore : Kelly & Walsh, Ltd., Printers. [Price 3*s.* 6*d.*]

A summary of this work is best given in the author's own conclusions which are as follows :—

" 1. Amoebae were found in the stools of 249 out of 819 cases of dysentery admitted to District Hospital, Kuala Lumpur, during the years 1914 and 1915.

" 2. The stools of 63 out of 249 cases of amoebic dysentery were examined bacteriologically. 19 cases were dealt with during the first investigation and dysentery bacilli were isolated twice. 44 were dealt with during the second investigation and dysentery bacilli were not isolated.

" 3. The stools of 172 out of 570 cases of non-amoebic dysentery were examined bacteriologically. 105 were investigated during the period extending from the 15th May to the 15th August, 1914, and 67 were investigated during the period extending from the 1st August to the 31st December, 1915.

" 4. Dysentery bacilli were isolated from the stools of 72 out of the 172 cases, being 44 out of the 105 in the first series and 28 out of 67 in the second series.

" 5. Dysentery bacilli of the Shiga type were isolated from the stools of 8 cases.

" 6. Mannite-fermenting dysentery bacilli were isolated from the stools of 64 cases.

" 7. The mannite-fermenting dysentery bacilli were not separable into varieties or types.

" 8. The reactions of the mannite-fermenting dysentery bacilli on maltose, saccharose and dextrin are subject to great variations and the results should not be used for classification or for the creation of types.

" 9. The dysentery bacillus of Flexner, the bacillus ' Y ' of Hiss and Russell and Strong's bacillus are not distinct types. These names should therefore be abolished ; their retention can only perpetuate the confusion. They should be known collectively as the mannite-fermenting dysentery bacilli.

" 10. The dysentery bacillus of Flexner and the bacillus ' Y ' of Hiss and Russell can ferment sorbite ; the reaction on this substance cannot therefore be used for the purpose of classification.

" 11. The comparison by means of sugar-reactions of freshly isolated strains of mannite-fermenting dysentery bacilli with those which have been isolated for some time or with those isolated by other workers is unsound.

" 12. The reaction of the patient's serum with various strains of dysentery bacilli may be negative in cases from which dysentery bacilli have been isolated.

"13. The disease associated with the mannite-fermenting dysentery bacilli does not differ from the disease associated with the *Bacillus dysenteriae*, Shiga. The term pseudo-dysentery should therefore be abolished."

E. E. A.

Izar (Guido). **Diarrea e dissenteria nelle armate in campagne con speciale riguardo alla terapia.** [Diarrhoea and Dysentery in Armies in the Field with Special Reference to Therapeutics.]—*Riforma Med.* 1916. Nov. 13. Vol. 32. No. 46. pp. 1257-1265. With 6 charts.

The author divides gastro-intestinal disorders, as seen in soldiers, into three groups: (1) simple diarrhoea, (2) chronic diarrhoea, similar to that met with in tropical climates, and (3) bacillary dysentery proper. The first type has a sudden onset, as the result of chills, the drinking of cold water, prolonged marches, or excessive or unsuitable feeding. The patient is taken with cramps in the abdomen, accompanied by the passage of liquid motions containing neither blood nor mucus. The bacterial flora of the intestine is normal in these cases, and is often reduced in amount. Removal from the ranks and rest, with a milk diet and the administration of opiates and astringents, quickly repress the symptoms.

The second form is characterised by the stools being principally composed of greenish mucus, often frothy and containing flakes of whitish material, which is suspended in a yellowish liquid of acid reaction and sour smell. Under the microscope particles of this mucus are seen to contain cellular elements, more or less disintegrated, along with numerous leucocytes, and many Gram-negative bacteria and infusoria. The flakes are seen to consist of clumps of bacilli surrounding fragments of food material, while chemical tests show that the green colour is due to unaltered bile. When left to stand in a vessel, the liquid separates into three layers, of which the upper one consists of a frothy greenish layer of acid smell, while the middle is composed of a turbid yellowish fluid, and the lowest consists of mucus. Probably the condition is due to a simple inflammatory catarrh of the ileo-caecal mucous membrane, due to the action of an excessive quantity of common saprophytic bacteria, the presence of unaltered bile-pigment showing that the inflammatory process is limited to the ileo-caecal portion of the intestine, by which the normal reduction of the bile pigments to stercobilin is prevented If these patients are kept for from 24 to 36 hours on a fluid diet, without any other medicine than lime-water diluted with mineral water, the stools soon return to their normal condition; but an intense irritability of the mucous membrane of the bowel usually remains, as is shown by the tenderness of the abdomen and the proneness to relapse. Patients with this form of diarrhoea should be kept quiet and suitably dieted for at least a week.

The specific cause of the third variety of diarrhoea is the dysentery bacillus. Of 170 cases of this affection observed by the author, as many as four-fifths came from a single division of soldiers who occupied a single line of trenches, in which previously no cases of the kind had occurred, the inference being that these soldiers brought the infection

with them. By appropriate measures the outbreak was quickly subdued. The epidemic under consideration was unusually benign, there being only one death in 170 cases, a fact which may be attributed to promptness in treatment. This type of bowel complaint is distinguished by a premonitory period lasting from 4 to 10 days, which is characterised by lassitude, loss of appetite, weakness and pains in the joints and limbs; sometimes, however, this preliminary stage is wanting. It is followed by the onset of colicky pains, occurring chiefly in the afternoon, which are followed by actions of the bowels, accompanied at times by nausea and vomiting. The author goes on to describe the subsequent course of the disease, with the aid of several clinical charts. The histories of six typical cases are given in full. The disease continues at its acme in these cases for from 4 to 20 days before convalescence sets in. Two of the cases treated showed typhoid symptoms, and in another there was gangrene of the bowel with severe collapse.

The treatment found most efficacious by the author was the administration of the mixture of charcoal and kaolin, recommended by Ascoli, in doses ranging from 20 to 60 gm., suspended in water or milk. In the graver cases recourse was had to serum therapy and afterwards to vaccines, of which the former did not give the good results expected, while the latter proved very satisfactory, provided that endovenous injection was employed. The vaccine was prepared by the author from material taken from the patients, according to the Pfeiffer-Kolle method, of such a strength that 1 cc. of the vaccine contained one-thousandth of a loopful of an ordinary agar-culture. The general dose for injection was 2 cc. of this solution, equal to 1/500th of a loopful. Local treatment of the bowel through a rectoscope was also successfully employed, and in the gangrenous case enemata of iodoform in oil, in a strength of 1 : 200, were used with benefit. To all the patients chlorhydrate of adrenaline was also given in order to relieve the griping pains and tenesmus, either by the mouth or by the rectum, the dose being 20 to 60 drops daily of a 1/1,000 solution. Evident benefit was obtained. The temperature charts in the text show very clearly the improvement which followed each dose of vaccine.

J. B. Nias.

Giroux (L.). **Dysenterie et diarrhées dysentériformes.**—*Presse Méd.* 1916. Sept. 14. Vol. 24. No. 51. p. 408. With 1 chart.

Amongst 150 cases of diarrhoea, there were 117 passing blood and mucus. The type of dysentery was mild as there were only five deaths. There seems to have been no pathological examination of the stools, but the failure of anti-dysentery serum led the author to try emetine, with good results. *E. histolytica* was presumably the chief cause therefore, of the epidemic.

In the definite dysentery cases a marked increase in the quantity of urine was an early sign of approaching convalescence. In the acute stage the quantity of urine passed in the 24 hours is small—about 500 cc. The convalescent period is ushered in by a sudden rise to 1,000, 2,000, or even 3,000 cc. of urine per diem. This increase is

accompanied by the excretion of about 16 to 20 gm. of chlorides, and also by slowing of the pulse. A typical instance is shown in the chart reproduced here.

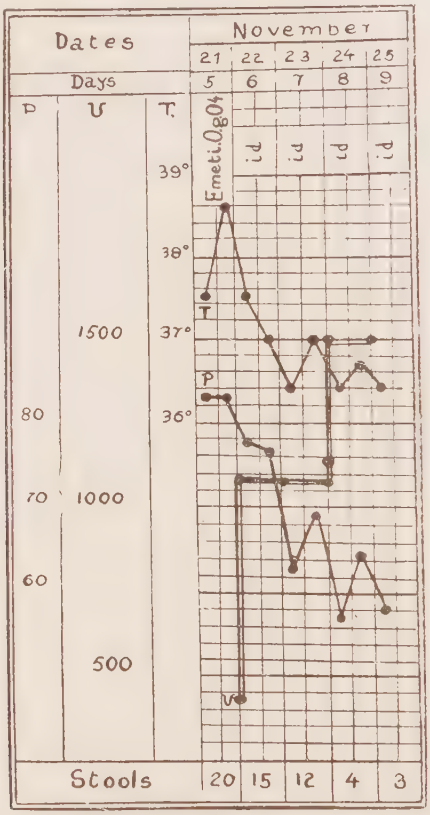

Chart illustrating effect of emetine on temperature, pulse, and excretion of urine in a case of dysentery.*

As regards medicinal treatment good results were obtained with cardiac tonics and morphined serum, the latter being especially helpful even in cases with marked albuminuria.

E. E. A.

Noc (F.). **Dysenterie bacillaire, dysenterie amibo-bacillaire et diarrhée chronique en Cochinchine.**—*Bull. Soc. Path. Exot.* 1916. Vol. 9. No. 9. pp. 709–723.

There is not very much bacillary dysentery in Cochin China. Of 219 cases during 1915, 173 were diagnosed amoebic dysentery, 19 bacillary dysentery, and 27 chronic diarrhoea. Anti-dysentery serum produces only temporary amelioration in mixed dysentery, but it may be the means of saving the patient if given in large doses early in the disease in conjunction with emetine.

*Reproduced, by permission, from *La Presse Médicale*.

A case of dysentery complicated by ulcerative stomatitis is recorded which developed mental symptoms—delusions. The patient, a woman of 32, completely recovered. *E. histolytica* and *B. dysenteriae* Y were present in the stools. Dysentery in children is often confounded with other forms of gastro-enteritis. As it is even more infectious than in adults, bacteriological examination of the faeces of all suspects is very important.

To avoid serum trouble in children when repeated doses are necessary the following procedure was adopted. The first dose of antidysentery serum was injected under the skin. The next day the same dose (10 to 20 cc.) was introduced into the rectum together with 60 cc. sterile water. The anus is guarded by a tampon and the child's legs raised until the injection is absorbed, which takes place in about 20 minutes. If this is not retained the subcutaneous injections are continued. There is however not much chance of serious anaphylactic symptoms.

After the bacillary nature of certain forms of chronic diarrhoea had become evident, Noc employed a combined method of immunisation with good results, that is to say a vaccine was given as well as anti-dysentery serum. Young agar cultures of dysentery bacilli in tubes of 18 mm. diameter were emulsionised in 20 cc. of saline solution and heated for an hour at 51° C. Lately the author has used bacillary emulsions in oil—the oil of sweet almonds washed with alcohol and sterilised. These emulsions are absolutely painless when injected subcutaneously. The dose of these vaccines used was $\frac{1}{4}$ cc. to $\frac{1}{2}$ cc.

E. E. A.

Magner (William). **Some Observations on Dysentery.**—*Lancet.* 1916. Oct. 21. pp. 703–707.

Two cases of infection with *E. histolytica* are noted in one of which *B. coli* was isolated from the blood; in the other, a member of the typhoid-colon group was found in the blood, giving acid in glucose as the only sugar fermentation.

As regards pathological findings bacillary dysentery differs radically from amoebic. In the latter it is common to find ulcers separated by areas of healthy mucous membrane, while in bacillary dysentery the lesion is of a diffuse nature, being due to the action of the toxin secreted by the Shiga bacillus, and is characterised by well marked submucous haemorrhage.

E. E. A.

von Jaksch (R.). **Ueber einen Fall von Dysenterie aus unbekannter Ursache.** [A Case of Dysentery of Unknown Origin.]—*Zentralbl. f. Inn. Med.* 1915. Nov. 20. Vol. 36. No. 47. pp. 749–752.

A woman of 31 had partaken of roast hare which was not quite fresh. She developed an acute attack of dysentery, of which she died in three weeks. The patient's blood did not agglutinate any of the known dysentery bacilli and *E. histolytica* was also excluded. The autopsy confirmed the diagnosis of acute dysentery, the large intestine showing pseudo-membranous ulceration. The ptomaine group of substances

was increased in amount in the urine—2·8 gm. of precipitate were obtained by treating 100 cc. of urine with benzoyl chloride. Toxins of the ptomaine class were probably the cause of this case of dysentery.

E. E. A.

Thomson (J. Gordon) & Thomson (D.). **A Preliminary Note on the Occurrence of Peculiar "Bodies" of probably Protozoan Nature frequently found in the Stools of Dysenteric Patients.**—*Jl. Roy. Army Med. Corps.* 1916. Nov. Vol. 27. No. 5. pp. 556–560. With 1 plate.

The authors describe certain structures which they found in the blood and mucus of dysenteric stools, in which entamoebae were not demonstrable. The work was apparently done in Egypt. The bodies were cellular and were of different types. Many of the cells were either round or oval and often possessed two nuclei of unequal size. The nuclei were spherical and sometimes contained on the internal periphery a lenticular mass of chromatin. Some of them had also a central karyosome. Some of the bodies possessed as many as four nuclei.

Another type of cell possessed a nucleus with a relatively large karyosome.

A third type of cell contained a large circular body in the endoplasm and two small circular masses of chromatin near it.

A fourth type of cell contained small bodies within it, five in number in the one illustrated; these are considered to be suggestive of schizogony. Large capsules were found in the same specimen, and were filled with numerous "spores," which were considered to be yeasts.

Another type of large cell was thought to be a connective tissue cell from the submucous layer. The cells are phagocytic and may ingest polymorphonuclear leucocytes, or possibly parasites.

The commonest bodies observed were rounded structures, which each contained a smaller rounded structure which may possibly have been of the nature of an ingested leucocyte or perhaps a Protozoon.

The authors cannot correlate these various structures.

A. P.

Elliott (John B.). **Clinical Report of a Case of Diarrhoea apparently due to Flagellate Parasites.**—*New Orleans Med. & Surg. Jl.* 1916. Oct. Vol. 69. No. 4. pp. 308–311.

The author describes a case of persistent diarrhoea in a young woman in South West Louisiana. There were six motions a day during 1914, the disease having begun in March 1910. In May 1915 she "looked a typical picture of one suffering from pernicious anemia." No amoebae were found in the stools but numerous *Cercomonas hominis* occurred therein. The patient was given thymol in the dosage usual for hookworm. Bismuth enemata and emetine were also tried at times, as well as chenopodium and an infusion of pecan-nut shells. In November 1915 there was a small rectal ulcer. In March 1916, Cercomonad flagellates were still present, and no change was reported in May 1916, the date at which the report ends.

A. P.

SPRUE.

Brown (Thomas R.). **The Gastro-Intestinal Findings in a Case of Sprue, with a Note on the Treatment based on these Findings.**—*Bull. Johns Hopkins Hosp.* 1916. Oct. Vol. 26. No. 308. pp. 289–291.

The article opens with quotations from other writers concerning the aetiology of sprue. A single case is here recorded by the author, the patient being a woman of 24 who had lived in Porto Rico. The interest of the case lies in the gastro-intestinal derangement. On admission to hospital at Baltimore the gastric contents were entirely free from hydrochloric acid and there was a marked diminution of pepsin. A quantitative examination of the pancreatic juice showed a complete absence of diastase and as far as could be determined, of trypsin and lipase also. She was put on dilute hydrochloric acid and large doses of pancreatin—30 gr. daily, together with calcium carbonate and a little tannic acid. She improved rapidly, the diarrhoea ceasing and the weight going up. In about eight months the gastric contents showed the normal quantity of hydrochloric acid and pepsin ; in the meanwhile the acid administered had been gradually reduced and finally discontinued without the appearance of unpleasant symptoms. The pancreatin ferment however was still absent from the faeces and on the stopping of the pancreatin for a few days the diarrhoea made its appearance again with the characteristic gray, frothy stool. Up to the time of writing the patient has to continue taking pancreatin.

E. E. A.

Halberkann (J.). **Harn- und Kot-Untersuchungen bei Sprue.** [Investigation of Urine and Faeces in Sprue.]—*Arch. f. Schiffs- u. Trop.-Hyg.* 1916. May. Vol. 20. No. 10. pp. 225–241.

The paper deals with the analysis of urine and faeces of a single case of sprue.

Urine.—A considerable quantity of indican was present, and also some unidentified substance which reduced Fehling's solution but was certainly not glucose. There was no albumin present. Urobilin and bile pigments were never found.

Faeces.—The stools were fermented and foul-smelling. Blood was never seen. Bile pigments were not found, but urobilin (hydrobilirubin) was detected or rather its precursor urobilinogen. This substance is also found in the faeces of normal individuals, both sucklings and adults, who are on a milk diet.

The average daily weight of the faeces was 598 gm. (39·4 gm. dried), compared with about 300–500 gm. as the weight of a normal semi-solid daily evacuation.

The total fats found in the faeces are greatly increased in sprue. Normally on a mixed diet they should average 6–8 per cent. In sprue the fats constitute over 20 per cent. and usually 40–50 per cent. This is not due to the failure of the fat-splitting enzymes to do their work, but rather to the absorptive power of the upper parts of the intestine being interfered with.

E. E. A.

Schmidt (Adolf). **Heilung eines Falles schwerer Spru durch Sauerstoffeinläufe.** [Cure of a Severe Case of Sprue by the Introduction of Oxygen.]—*Zeitschr. f. Inn. Med.* 1916. Jan. 29. Vol. 37. No. 4. pp. 49–52.

A married woman, 30 years old, had a severe attack of sprue. A milk diet failed to ameliorate the condition. A fat-free diet was then tried with the same result. Oxygen introduced in this case per rectum was next given, the quantity being a litre. The first application caused a painful burning sensation in the abdomen, accompanied by thin motions and vomiting. A considerable all-round improvement however had taken place by the next day, which continued for many days. The injections were now repeated at first weekly and later fortnightly, with the result that the patient made a complete recovery.

E. E. A.

TROPICAL DISEASES OF THE SKIN.

Brault (J.) & Viguier (A.). **Les champignons des teignes rencontrées à Alger.**—*Ann. de Dermat. et de Syph.* 1916. July. Vol. 6. No. 4. pp. 169–185. With 3 text figs.

This is a clinical and microscopical study of the fungi of the various forms of ringworm recently met with at the Mustapha Hospital in Algiers. The trichophytons observed have been: of the skin, *T. acuminatum*, 1 case; of the scalp, *T. acuminatum*, 8 cases; *T. violaceum*, 4 cases; *T. crateriforme*, 2 cases; *T. cerebreforme*, 1 case; *T. granulatum*, 1 case; *T. granulosum*, 1 case; *T. luxurians*, 2 cases.

Several cases of Eczema marginatum, due to the fungus *Epidermophyton inguinale* were met with.

Only one case of a Microsporon tinea has been seen in 12 years and this was by one of the authors in 1906.

Favus does not seem to be so uncommon in Algiers. From December 1912 to May 1914, 22 cases were seen in the clinic. All but one case were due to *Achorion schoenleinii*, the one being caused by *A. quinckeanum*.

Several drawings of cultures and of fungi in cultivation illustrate the paper.

P. S. Abraham.

Ricono (M.). **Tinea bovina—Sitsua (Basuto) Mna (Kaffir).**—*S. African Med. Rec.* 1916. July 22. Vol. 14. No. 14. pp. 212–216. With 2 plates.

Tinea bovina, due to a fungus which may be called *Trichophyton bovinum*, which is similar to *Trichophyton equinum*, is fully described in this paper. It is very common in calves in South Africa, the disease showing in whitish patches especially about the head and neck; and is frequently observed in the natives, especially those who have to do with cattle. The author has made numerous inoculations and cultural experiments.

In native adults the affection generally starts on the legs in a ring of desquamating epidermis, enlarging peripherally and developing pin head vesicles in the patch. The vesicle bursts, discharging fluid which dries into crusts over a raw surface.

In children glabrous and hairy parts may be affected simultaneously, and the scalp lesions may easily resemble pyogenic affections, especially the pyosis caffra described by the author. The lesion may also be mistaken for pustular syphilis, yaws, leprosy, pustular eczema, etc.

Sulphur and salicylic ointment is efficacious in early cases, chrysarobin in old chronic cases. It has a tendency to spontaneous cure after a time, especially in children.

The paper is well illustrated by photographs. P. S. A.

Chieffi (Alessandro). **La tigne nella provincia di Napoli.** [Ringworm in the Province of Naples.]—*Giorn. Ital. d. Malat. Ven. e d. Pelle.* 1916. July 26. Vol. 57. Year 51. No. 3. pp. 140–169.

An analysis of 83 cases of ringworm, and allied affections of the skin, observed during a period of 18 months, from April 1914 to October

1915, in the out-patient department of the Naples Clinic. The nomenclature employed is that of SABOURAUD. The distribution of the cases was as follows:—

I.

Trichophytosis of the beard	Macular type	Gypseum asteroides	3
		Rosaceum	1
	Depilatory type	Gypseum asteroides	7
		Rosaceum	8
		Acuminatum	1
		Violaceum	1
	Sycotic type	Gypseum asteroides	3
		Rosaceum	13
			37
Trichophytosis of the scalp	Depilatory type	Violaceum	15
		Gypseum asteroides	5
		Acuminatum	7
		Crateriforme	2
	Kerion	Gypseum asteroides	3
		Violaceum	1
			33
Trichophytosis of the non-hairy skin	Squamo-erythematous type	Gypseum asteroides	3
		Rosaceum	5
		Violaceum	2
	Pustulo-vesicular type	Umbilicatum	1
		Gypseum asteroides	1
		Acuminatum	1
			13

II.

Order of frequency of the type of parasite.

Trichophyton rosaceum	27
Gypseum asteroides	25
Trichophyton violaceum	19
„ acuminatum	9
„ crateriforme	2
„ umbilicatum	1
	83

It will be observed that in Naples ringworm of the scalp is uncommon, and is in fact less common than ringworm of the beard in its various forms.

Of ringworm due to *Achorion*, i.e., favus, the author observed during the same period 142 cases, of which 139 were on the scalp, and 2 on the

body. One case due to Microsporon was also noticed. It was impossible in the latter to trace the channel of infection. Practically speaking, Microsporon ringworm is unknown in Naples.

Similar statistics as to the relative prevalence of different kinds of ringworm have already been compiled by other observers for the larger centres of Italy, from which it would appear that Naples is exceptional in the paucity of cases of ringworm of the head, and the frequency of ringworm of the beard. A bibliography of Italian memoirs bearing on the subject is appended.

J. B. Nias.

Radaeli (Francesco). **Formazioni pseudoactinomicotiche sperimentali da achorion Schönleini e da trichophyton violaceum.** [Experimentally produced Pseudo-Actinomycotic Forms of *Achorion Schönleinii* and *Trichophyton violaceum.*]—*Giorn. Ital. d. Med. Ven.* 1915. Nov. 26. Vol. 50. No. 5. pp. 413–418. With 1 plate.

The author injected into the aural and jugular veins of rabbits suspensions of agar-growths of *Achorion schönleinii*, obtained from a case of favus, and of *Trichophyton violaceum*, from a case of ringworm. The result was the production of infarcts in the lungs consisting of mycelial growths, which showed a strong resemblance to the radial formations of Actinomyces, as is shown in a plate.

The author insists, as a consequence, that a radial disposition of the hyphae of a mycelial growth in the tissues is not at all a certain proof that the organism in question is an Actinomyces. The tissues were hardened in alcohol, formalin, or Heidenhain's sublimate solution, while the sections were stained with a double stain of lithia- or alum-carmine, followed by Weigert's stain for fibrin. Sabrazès and Bukowsky have obtained similar results [see reference in text].

J. B. N.

Boucher (H.). **Un Cas de Blastomycose à la Côte d'Ivoire.**—*Bull. Soc. Path. Exot.* 1916. July. Vol. 9. No. 7. pp. 414–416.

A native woman, aged about 30, who had never had syphilis, with six healthy children, for two years had suffered with pains in the bones and irregular fever. There were several scars on the dorsal surface of the left hand and forearm following ulcerations which had been diagnosed as sporotrichosis and cured by potassium iodide. Subsequently a nodule developed on the right tibia larger than a pigeon's egg and recently the peroneal malleolus of the same leg became swollen and painful. Yellowish lesions were found on the soft palate and on the left inferior turbinal bone.

The tibial tumour was punctured and the sanguineous fluid obtained showed numerous rounded spores with double contour and above 10μ in diameter. The patient then disappeared and no cultural experiments could be made.

P. S. A.

Escomel (E.). **A propos d'un cas de Blastomycose au Pérou.** -*Bull. Soc. Path. Exot.* 1916. Dec. Vol. 9. No. 10. pp. 756–759.

A case of blastomycosis in a mule driver working in an endemic district for this disease is here described. The ulcerated primary lesion had existed for 11 months (January 1915) on the right forearm before being seen by the author. The patient then complained of nothing in the nasal mucous membrane, but on examination a small round ulcer was seen in the right nostril and evidence of the disease further in, but nothing in the left. Both the ulcer on the arm and that in the nostril were removed by galvano cautery, and their bases deeply cauterised. Microscopical examination showed the characteristic three zones of a blastomycoma—a central parasitic, an intermediate and an external zone of blastomycosic cells (plasmocytes). In the initial lesion undergoing regression, there were large giant cells with 20 or 30 nuclei. Some of these cells contained blastomyces.

After removal of the initial lesion and the secondary nasal growth, three intravenous injections were given of antimony tartrate. The commencing ulceration on the turbinal horn was not modified, so this was cauterised. After a month all the lesions seemed to be cured.

The man returned to the endemic area in June 1916, and in July he presented himself with ulcerations in both nasal passages but no return in the forearm. A saturated solution of tartrated antimony was applied to the mucous lesions with some benefit.

The main points were the existence of giant cells, the three characteristic zones in the early secondary lesions, the blastomycosic cells easily demonstrated by Giemsa's stain, the importance of scraping at many points in order to show them, the fact that secondary lesions may develop after the primary has been cured, and that tartrated antimony does not give in blastomycosis such good and rapid results as we see in leishmaniasis.

P. S. A.

Castellani (Aldo) & Pinoy (E.). **Notes on a New Ulcerative Dermato-Mycosis.**—*Brit. Med. Jl.* 1916. Oct. 7. p. 486. With 1 plate.

Since 1907 Dr. Castellani has met in Ceylon peculiar ulcerative conditions due to a characteristic fungus, which has been named by Pinoy *Acladium castellanii*. Cases have also occurred in the Malay States and in the Balkans.

As a rule, no hyphomycetic elements are seen in scrapings of the lesions, but cultivation in glucose agar shows small yellowish colonies in four to eight days. The disease has been successfully inoculated in coolies from pure recent cultures.

In a well marked case the ulcers may be situated all over the body and limbs and are sometimes purulent and crusted; nodules and furuncles may also be present. The lesions are not usually painful or itchy. The general health of the patient is not affected for a considerable time, but he may complain of weakness and general discomfort. The course of the disease is long, and if untreated there is little tendency to spontaneous cure. Most of the cases had been wrongly diagnosed as syphilis.

The affection is often readily cured by potassium iodide in 20 gr. doses three times a day, especially with a salt-free diet. Mercury and arsenic have no beneficial effect. Locally a weak mercury perchloride lotion is sufficient to clear the ulcers. Ointments are usually badly borne.

P. S. A.

Wolbach (S. B.). **Recovery from Coccidioidal Granuloma.**—*Boston Med. & Surg. Jl.* 1915. Jan. 21. Vol. 172. No. 3. pp. 94-96.

This paper refers to the case culturally examined by Dr. Wolbach and successfully treated by curetting by Dr. W. P. Bolles of Boston in 1914, the patient, now aged 75, having remained free from the disease ever since. The author emphasizes the fact that " coccidioidal granuloma " is a distinct disease, and should not be confounded with " true blastomycosis " (Torula infection), or " Cutaneous and systemic blastomycosis " so-called, in which the organism reproduces in tissues by budding and in cultures has a mould-like growth. In coccidioidal granuloma the organism grows in tissues by endogenous sporulation; in cultures as a mould-like fungus, never by budding.

In McNeal and Taylor's summary (1914) 24 cases were collected of coccidioidal granuloma including the case here referred to. This and one other in which a leg affected was amputated are the only ones that have recovered.

P. S. A.

Tyau (E. S.). **Human Sporotrichosis, with Report of Case.**—*China Med. Jl.* 1916. July. Vol. 30. No. 4. pp. 233–235.

The author records probably the first case of human sporotrichosis observed and microscopically diagnosed in China. The patient was a Chinese woman, aged 31, living near Amoy, affected for three years with sluggish inflamed swellings over the left elbow, which became nodular and subsequently broke down. Similar lesions appeared later near the right elbow. After prolonged search, smears from the discharge showed mycelia and spores of Sporotrichum. The purple red colour of the nodules and crateriform depressions were typical; there was neither pain nor itching, and the general health was unaffected.

External application of Lugol's solution, and increasing doses of potassium iodide soon produced marked improvement and recovery was complete in eight weeks.

P. S. A.

Greig (David M.). **A Case of Sporotrichosis.**—*Edinburgh Med. Jl.* 1917. Jan. New Ser. Vol. 18. No. 1. pp. 42–46. With 1 plate.

An interesting and extensive case of sporotrichosis is here described. The patient aged 39, a native of Roseneath, went to sea when sixteen, had been employed in America where he had malaria, and subsequently migrated to South Africa in 1896 and was engaged in the mines. In 1910 he injured a finger with a piece of rock, and a swelling started in the axilla; this was variously treated by poulticing, lancing, scraping, vaccines, etc., but without permanent improvement; other abscesses

formed and burst, and ulcerations set in in spite of surgical treatment in hospital, salvarsan, etc. He returned to Scotland in September 1912, and had the affected skin removed on the diagnosis of tubercle, but without stopping a further breaking down of tissue and recurrence of abscess formation. He came under the author's care in March 1913 with extensive ulceration on the right side of the chest reaching to the axilla (shown in a photograph). He was thin and anaemic and had lost now two stones in weight. A recently-developed patch over the sixth costal cartilage showed the characteristic appearances of the disease. The abscess was opened.

A dressing of 2 per cent. iodine in spirit was kept applied and potassium iodide commencing with 10 gr. doses, gradually increased to 25 gr., was given three times a day, until January 1914 when the lesion was quite cured and has so remained.

Repeated pathological examinations revealed no evidence of tubercle, cancer, actinomycosis, or streptothricosis and there was no syphilis. The true diagnosis was confirmed by Professor SUTHERLAND. The author remarks on the rarity of indigenous cases of this disease.

P. S. A.

MACFIE (J. W. Scott). **A Fourth Variety of Trichonocardiasis, with a Note on the Cultivation of *Nocardia tenuis* (Castellani, 1911).**—*Ann. Trop. Med. & Parasit.* 1916. Dec. 16. Vol. 10. No. 3. pp. 283–289. With 8 text figs.

Dr. Macfie in this paper gives an excellent account of "Trichonocardiasis"—an affection not uncommon in West Africa, but the occurrence of which in these parts has not been previously recorded, except by a brief reference by CHALMERS and O'FARRELL (1913). The disease, which affects the hair shafts in the axillae and groins, is caused by the fungus *Nocardia tenuis*. Three varieties are recognised: "Trichonocardiasis flava," T. nigra" associated with *Micrococcus nigrescens*, and "T. rubra" associated with *M. castellanii*. A fourth variety "T. fusca" is here added occurring in the Gold Coast, and distinguished by its brownish colour, instead of the yellow of "T. flava" or the rich red of "T. rubra."

Cultures gave yellow colonies of diplococci, resembling in general characters except in colour the cocci of the other varieties. The author has observed the other forms in West Africa, but not the black. Europeans are often affected by the disease, but as the natives usually shave the axillae it is difficult to say to what extent they are affected. It dies out in temperate climates, but is liable to reappear when a European returns to the coast.

Shaving alone is not sufficient to cure the disease, as it reappears on regrowth of the hair.

Scrapings from the infected hairs exhibited hyphae, some branching —which like the older growths in cultures were Gram positive; these are figured. The Gram reactions in young cultures were not uniform, or even negative. The fungus had not previously been cultivated, although CHALMERS and O'FARRELL observed some growth in hanging drops.

P. S. A.

i. Chalmers (Albert J.) & Archibald (R. G.). **A Sudanese Maduromycosis.**—*Ann. Trop. Med. & Parasit.* 1916. Sept. 30. Vol. 10. No. 2. pp. 169–222. With 4 plates.

ii. Chalmers (Albert J.) & Christopherson (J. B.). **A Sudanese Actinomycosis.**—*Ibid.* pp. 223–282. With 4 plates.

These two papers constitute most comprehensive monographs on the subject of the mycetomes, under which name the authors include "all growths and granulations producing enlargement, deformity and destruction in any part of the body of man, brought about by the invasion of the affected area by certain species of fungi belonging to different genera which give rise to variously coloured and shaped bodies called "grains," which are formed of hyphae with or without chlamydospores, and are found either embedded in the pathological tissue forming the growths and granulations, or escaping freely in the discharge from the diseased area." Following Pinoy, the diseases included under the general name "mycetome" may be divided into two distinct groups—the "True mycetomes" and the "actinomycoses"—but the authors suggest the term "Maduromycoses" in place of the former. The first paper deals exclusively with the "Black maduromycoses" giving full historical, geographical and pathological accounts and detailing their own careful and numerous observations and experiments with material obtained from a case at Khartoum and from Semon's case from India.

The fungus cultivated from the Khartoum case and named by the authors "*Glenospora khartoumensis*" is nearly allied to, but not identical with that of Semon's Indian case.

ii. In the second paper the authors give a full historical and critical summary of our knowledge of the actinomycoses of man or "those forms of mycetoma with grains composed of very fine non-segmented mycelial filaments, in which usually the walls are not clearly defined from the contents, and without clamydospores." They believe that they have discovered a new form of actinomycosis in a man in the Sudan, due to a new fungus which they have named *Nocardia convoluta*. Elaborate details are given of their pathological and cultural observations.

As with "Maduromycosis" the best treatment is complete removal of the whole growth.

P. S. A.

Medina Jiménez (R.). i. **Segunda nota sobre afecciones micósicas.** [Second Note on Mycotic Affections.]—*Gaceta Med. de Caracas.* 1916. Apr. 15. Vol. 23. No. 7. pp. 49–51. With 3 plates.

ii. **Tercera nota sobre afecciones micósicas.** [Third Note on Mycotic Affections.]—*Ibid.* Apr. 30. No. 8. pp. 57–58. With 1 plate.

iii. **Afecciones micósicas de Venezuela.**—26 pp. With 5 plates. 1916. Caracas. Tipografia Guttenberg.

In a previous note [see this *Bulletin*, Vol. 6, p. 136] the author described certain varieties of skin disease occurring in Venezuela, as new. One of these, there identified with Khi-Huen, now turns out to be Caraté attacking the wrists and ankles [note ii]; while the other [note iii], locally known as "galapago," proves to be actinomyocosis.

iii includes the substance of i and ii.

J. B. N.

McNair (James B.). i. **The Pathology of Dermatitis Venenata from *Rhus diversiloba*.—*Jl. Infect. Dis.*** 1916. Sept. Vol. 19. No. 3. pp. 418–428. With 7 text figs.

ii. **The Transmission of Rhus Poison from Plant to Person.**—*Ibid.* pp. 429–432.

i. The poisonous sap of "Poison Oak," *Rhus diversiloba*, may enter the skin through the gland ducts, the hair follicles or through the surface itself, and produce inflammation of varying degree of intensity. The effects are observed at all times of the year, but at Berkeley in California they are mostly seen in February, March and April.

The author has made an elaborate pathological investigation and has shown that leucocytosis is a prominent result of the absorption of the poison, especially in the severer cases. Sections of the affected skin always showed leucocytes, with predominating mononuclear cells.

He gives a summary of his observations :—

"The sap of poison oak (*Rhus diversiloba* T. & G.) contains a slowly diffusible skin irritant.

"This irritant makes entrance through the sudoriparous and sebaceous ducts, the hair follicles, and through the skin itself.

"It produces a dermatitis in many ways similar to many other forms of dermatitis venenata.

"Slight constitutional disturbances may take place ; a temperature of 37·5 C. ; sometimes a febrile condition involving a coated tongue, loss of appetite, and constipation. The urine may have a trace of albumin. One case of acute nephritis is recorded. Sugar has never been noticed.

"The seat of inflammation involves that part of the integument which comes in contact with the poison. In over 1,000 cases the backs of the hands, the inside of the forearms, the eyes, ears, and genitalia have been thus involved. The vesicular exudate is non-toxic.

"The course of the affection is often acute. It usually reaches its maximum within several days after exposure and may subside within from four to six days.

"Diagnosis may occasionally be difficult. History of the onset, occupation, and exposure is useful. Peculiarities may be noticed in the distribution and configuration of the eruption in distinction from eczema and herpes."

ii. In the second paper the author gives details of a large number of experiments carried out to determine the nature of the poison and whether it be gaseous or not. He has demonstrated that the poison of *Rhus diversiloba* is non-volatile, even when mixed with volatile oil, but that it may be carried by the particles of soot in smoke ; that the pollen of the plant is non-toxic ; that neither the plant trichomes nor their exudate is poisonous ; and that it is the resinous sap only that is toxic.

His conclusions are that :—

"The poison of *Rhus diversiloba* is not carried normally by the wind, for it is neither bacterial nor volatile, and the pollen, the plant hairs, and the cork cells are nontoxic.

"Poisoning may occur as the result of direct contact with the unfiltered smoke from the plant, direct contact with the resinous sap, or indirect contact with the resinous sap on clothing, cord wood, tools, etc."

P. S. A.

Hays (Melville A.). **The Treatment of Ivy Poisoning.**—*New York Med. Jl.* 1916. Nov. 4. Vol. 104. No. 19. Whole No. 1979. pp. 902–904.

In this paper the experiences of several medical men are given in the treatment of Dermatitis venenata due to contact with "poison ivy" or plants of the genus Rhus.

Dr. Hays, of New York, particularly recommends free sponging and dressing with saturated solution of sodium bicarbonate. Dr. Achard of Chicago, uses lotions containing magnesium carbonate, and refers to Dr. Trench's method of chewing the leaves of the plant and swallowing the juice as a prophylactic as well as curative measure.

Others use soap suds followed by alcohol, lead and opium solution to allay the burning and pain, weak carbolic solution, boric acid solution, calamine lotion, and cream with copper sulphate 5 gr. to the ounce.

P. S. A.

Frost (Lowell C.). **The Bacterial Etiology of Poison-Oak Dermatitis (Rhus Poisoning).**—*Med. Record.* 1916. Dec. 23. Vol. 90. No. 26. Whole No. 2407. pp. 1121–1123.

The author reports, from a large number in his experience, seven cases of dermatitis due to *Rhus diversiloba* or "poison oak," which with laboratory experiments on certain bacteria found on the leaves of the plant lead him to believe that the dermatitis is an exanthem caused by invasion of a definite organism and not, as generally thought, by the cutaneous irritation of a chemical poison or toxic oil secreted by the leaves. He admits that this oil is irritating to the skin, but considers that its toxicity is exaggerated and that the dermatitis is otherwise caused for the following reasons:—(1) There is an incubation period, averaging $4\frac{1}{2}$ days, the time being influenced by the dose. (2) Complete immunity is shown by certain individuals. (3) This immunity may be diminished through a lowering of the physical condition, change of climate, etc. (4) Exposure may be strictly limited to proximity to the plant, without contact. (5) The first appearance of the exanthem is often on an area untouched by the plant or protected from subsequent indirect contagion. All these considerations and others point rather to a bacillary origin of the affection than to its being the effect of an irritant poison.

Bacterial cultures made in August 1915 from the leaves of *Rhus toxicodendron* showed several types of cocci and bacilli; one short thick bacillus, about 3 to 4 microns long and 2 broad, was apparently constant on all the leaves examined, especially on the under surface. Growth was abundant on potato, but not on agar, gelatine or bouillon. Inoculation of the pure culture in the skin produced slight redness after 48 hours, but without further symptoms. The author has been unable to carry out further experiments but he thinks that important results on these lines may be attained by competent investigators.

P. S. A.

Chalmers (A. J.) & Martin (A. F. C.). **Acnitis in an Egyptian Soldier.**—*Proc. Roy. Soc. Med.* 1916. Nov. Vol. 10. No. 1. Sect. of Dermat. pp. 23–50. With 17 text figs.

This paper gives an exceptionally full and well illustrated account—clinical and pathological—of a case of acnitis, the first recognised in Africa.

In June 1916, an Egyptian soldier, aged 27, suddenly developed an eruption on the face, with slight fever. When seen five days later there were numerous discrete papules especially on the forehead, nose, cheeks and chin, the ears, sides and back of the neck, where they were closely packed, and on the backs of the hands, the distribution being limited to parts exposed to light.

The patient was at once treated by intestinal disinfection, small doses of calomel every night with salines, and salol in the day, the eruption disappearing in a few days. The treatment was then stopped, but in about a week the papules reappeared, although not so extensively, on the face and neck, some of the lesions now containing pus. This second eruption quickly disappeared on resuming the treatment. No tubercle bacilli could be detected in the lesions nor in the man's sputum and inoculation in a guinea-pig was negative, but von Pirquet's reaction was strongly positive.

An elaborate description with microphotographs is given of the histological changes found by the authors and by other observers and the etiology is fully discussed as well as the differential diagnosis of the affection from acne vulgaris, acne varioliformis, lupus vulgaris and other tuberculides, erythema induratum, dermatitis nodosa rubra and drug eruptions.

The authors regard acnitis "as an eruption caused by a poison generated under the influence of sunlight by cutaneous cells sensitised to the tubercular virus, and attacked by the products of an intestinal autointoxication, the whole process being *anaphylactic* in nature." They recommend at an early stage treatment against the auto-intoxication.

P. S. A.

Balliano (A.). **Osservazioni sopra l'ulcera rotonda fagédenica tropicale.** [Observations on Phagedænic Tropical Ulcer.]—*Morgagni.* 1916. June 30. Vol. 58. Pt. 1. No. 6. pp. 205–217. With 1 plate.

An account of the author's experience with tropical ulcer occurring in Libyan native soldiers. The patients themselves attribute the occurrence of these ulcers to cuts and abrasions of the feet and legs received during military manœuvres on stony ground. The legs of the native being seldom clean, infection of these wounds occurs with the *B. fusiformis* and its associated spirillum. The author apparently succeeded in isolating this organism in all his cases. A number of treatments for these ulcers were tried, but all were perfectly unsuccessful with the exception of iodoform which, dusted on the wound for two or three days, speedily leads to a perfect cure. Brief details are given at the end of the paper of 24 cases, in which this treatment was employed.

Having convinced himself of the perfect efficacy of the iodoform treatment, the author ventured upon auto-inoculation of such ulcers, experimentally. Scarifications were made on the forearm, or the inner side of the thigh, into which pus from an ulcer was rubbed. The seat of inoculation was then covered with a watch-glass strapped on with plaster. After 10–12 hours a slight reddening and swelling of the edge of the scarified area was observed, followed at the end of 24–36 hours by a yellow pimple under the skin. By the third day a pustule is formed, conical and surrounded by a red halo, of the size of a one-centime piece. If the epidermis of such a pustule is removed, a characteristic round ulcer is found underneath, cup-shaped and with all the characters of the original sore. By the seventh day the sore is as large as a 2-lira piece, and the pus has the characteristic foetor. In this pus the fusiform bacillus will be found in profusion, but the spirilla are seldom present, being only found twice in 26 inoculations, and then only in small numbers. The experimental ulcer heals as readily under iodoform treatment as the natural one. A bibliography of 68 papers bearing on the subject of tropical ulcer is appended. [M. Blanchard (1914) appears to have been the first to transmit tropical ulcer by contagion from man to man. For an account of his experiments see this *Bulletin*, Vol. 4, p. 36.]

J. B. N.

Boucher (H.). **Traitement rapide de l'ulcère phagédénique des pays chauds.**—*Bull. Soc. Path. Exot.* 1916. July. Vol. 9. No. 7. pp. 419–425.

The author describes 14 cases of phagedenic ulceration, rapidly cured by the application of "formol" (40 per cent. formaline) on a cotton wool tampon. In most cases one application has been sufficient, followed, when a scab has formed, by a bismuth dressing. In only two cases have three applications of formol been necessary.

Formol has also been in his hands the best treatment for guinea-worm, the tumour being opened and cotton soaked in formol inserted; the worm can then be rotated out on a stick without rupture.

The author further strongly recommends python fat as a basis for ointments.

P. S. A.

Low (G. C.) & Newham (H. B.). **A Case of Ulcerating Granuloma successfully treated by Intravenous Injections of Antimony.**—*Brit. Med. Jl.* 1916. Sept. 16. pp. 387–389.

After giving an excellent description of the disease, and a resumé of observations on the use of antimony in tropical medicine, and especially in ulcerating granuloma, the authors record the case of a man who had lived in the Gold Coast, with the usual leaves home, since 1908.

At the beginning of this year, a small sore appeared on the glans penis two days after connection with a black woman. Three injections of salvarsan and 13 of mercury had no effect in stopping the ulceration and Wassermann's reaction was negative.

The case was admitted by Mr. Cantiel in the Albert Docks Hospital and intravenous injections of antimonium tartaratum commencing with 1 gr. in 2 oz. of normal saline was given from May 1st. The third

and fourth injections contained 1½ gr., the fifth and sixth 2 gr., and from May 22nd the seventh injection 2½ gr. This amount was continued every two or three days until 30 injections had been given.

Distinct improvement was very soon observed and complete healing was effected after 53½ gr. had been given.

The authors have thus proved that treatment by antimony alone may succeed in healing this intractable disease, but they suggest that a judicious combination of X rays and antimony injections might shorten the treatment.

P. S. A.

Johnson (L. W.). **A Case of Gangosa.**—*U. S. Nav. Med. Bull.* 1916. Oct. Vol. 10. No. 4. p. 667.

Treatment by salvarsan and mercury has been so successful for gangosa at Guam that active cases are now rare. Three cases after a long interval have been recently treated in the hospital, and one is here described. A girl, aged 14, had yaws when two years old. Seven months before admission a small sore appeared on the end of her nose, spreading into a large crusted ulcer involving the upper lip, cheek, and nose, the tissues around being swollen and dusky red. Most of the nasal septum was destroyed, but there was no involvement of the hard palate or oral mucous membrane. There was discomfort due to the foul odour and obstruction of the nostrils by crusts, but no pain.

A Wassermann reaction was strongly positive. Salvarsan ·3 gm. was given intravenously, producing a strong reaction, with congestion and bleeding from the surface. There was a remarkable change in 24 hours. Mercury was subsequently given by inunction and iodides by the mouth; a rapid cure resulted and she was discharged in 25 days. Photographs taken before treatment, 48 hours after the salvarsan, and just before she left the hospital illustrate the paper.

P. S. A.

Ross (Philip H.) **Dermatitis due to the Secretion of a Beetle in British East Africa.**—*Jl. Trop. Med.. & Hyg.* 1916. Sept. 1. Vol. 19. No. 17. p. 202.

In July and August 1915 several cases of acute dermatitis occurred in Nairobi, caused by a small beetle of the genus *Paederus*, and similar to the epidemic described by Rodhain and Houssiau at Leopoldville, which was due to another species of the same genus [see this *Bul'etin*, Vol. 7, p. 132, where the name of the genus is wrongly given]. The East African beetle is slightly larger than the latter. It appears that the beetle only exudes the acrid fluid when irritated, and the lesions are vesicular, and may be either in patches or lines, and are painful like a burn. The beetles are especially to be seen in July and August.

P. S. A.

Quiros (David). **Biologia de la Nigua.** [Biology of the Chigger.]—*Anales del Hosp. de San José.* 1916. Nov. 1. Vol 2. No. 1. pp. 1–17. With 4 figs.

A well-written account, in parallel columns of Spanish and Italian of the biology of the chigger or sand-flea (*Dermatophilus penetrans*).

In Costa Rica its principal host is the domestic pig, whose feet are often severely invaded, as is well shown in a figure. As these animals are driven through the towns to the markets or slaughter-house, they infect the soil of the streets, and secondarily human beings. The sores created by the chigger are, so the author says, often the portal of entrance of the tetanus bacillus, the most frequent victims being the bare-footed boys, from 4 to 14 years of age, who play in the streets, while men, women and girls are affected in a lesser proportion. From statistics furnished by public authorities, it would appear that, in the last four years, the number of deaths from tetanus in Costa Rica amounted to no less than 1,147. Making an allowance of 75 per cent. in this number for wrong diagnosis and other modes of infection, the author reckons 250 deaths from tetanus, during the preceding four years, as being due to chiggers. The total population of Costa Rica is 370,000 persons. In the neighbouring Republic of Nicaragua, the chigger is regarded as equally dangerous. Another lesion, which may be thus caused, is gas-gangrene. The author knows personally of two cases, one in an Italian and the other in a Frenchman, in which death was thus caused through chiggers.

When the insects are few, they can be dug out of the skin in the usual way, with a needle, but when they are numerous this method is too tedious and too painful for adoption. A good application is then found in the following ointment.

Salicylic acid	2·50 gm.
Icthyol	10 „
Yellow vaseline	10 „

In a few days after its application the scabs will fall off and the skin is then left clean. Local baths of petroleum to the affected parts are also good. Tincture of iodine, often recommended, the author does not like. The burrows remaining after the extraction of the insect should always be dressed antiseptically, say with a warm fomentation of 1 : 1,000 sublimate solution. The laity fill the burrows with wax from the ear, chewed tobacco, or cigar-ash.

The best prophylaxis against chiggers would be a prohibition against bringing pigs affected with chiggers to the public slaughter-house through the streets, along with regulations for treating affected pigs in the localities where they are kept.

J. B. N.

Sergent (Etienne) & Alary (A.). **Petite épidémie d'acariose en Algérie.**—*Bull. Soc. Path. Exot.* 1916. Dec. Vol. 9. No. 10. pp. 771–773.

Irritation produced by the "acarien" of barley—*Pediculoides ventricosus*—may become intolerable and produce an affection simulating urticaria and scabies—sometimes like a small epidemic, as in the autumn of 1916 in the valley of Chéliff. The eruption generally begins on the limbs, the face or neck, and spreads over the body, particularly the thorax. Pimples sometimes cover the whole body or the lesions may be like urticaria, but with a small vesicle in the centre of the patches. Swelling of the face and neck may ensue, and after some days the patches subside, but the itching may continue and lesions from scratching appear.

The site of the eruption differs from that in scabies, but as in that affection the pruritus is made worse by heat and at night.

The symptoms may come on very rapidly—in a few hours—after being in contact with a person affected or after handling barley.

Left to itself the affection usually disappears in about 12 days, but in children, especially, itching and scratching may long continue. Antiseptic lotions ameliorate the pruritus, and cases have been quickly cured with sulphur and with Helmerich's ointment.

P. S. A.

Connor (Roland C.). **A Case of Scleroderma.**—*Proc. Med. Assoc. Isthmian Canal Zone.* Apr. to Dec. 1915. Vol. 8. Pts. 1 & 2. pp. 59–60.

The author reports a case of diffuse symmetrical scleroderma in a woman aged 24, a native of Bogota, Colombia. The induration of the skin was of above a year's duration, commencing on the neck and extending down the arms, and later appearing on the face, chest, back and legs. The hidebound condition was practically everywhere, except over the abdomen and on the legs below the knees. Under treatment for two months with thyroid extract and inunction with cocoa butter some improvement was observed.

P. S. A.

d'Anfreville (L.). **La Kératodermie symétrique en Afrique.** — *Bull. Soc. Path. Exot.* 1916. July. Vol. 9. No. 7. pp. 442–444. With 1 plate.

The author has found this affection more frequent in Morocco than in Senegal, and records several cases at Rabat and at Salé. He does not agree that they are syphilitic in origin, but thinks that the symmetrical hypertrophic lesions on the soles and palms occurring chiefly among the poorer class are due to the wearing of sandals in the cold and damp weather of winter. An appended photograph shows the lesions of the feet and hands in a girl of 12.

P. S. A.

Urbain (Gaston). **Un cas de gale démodectique du cheval. Contagion à l'homme.**—*Bull. Soc. Path. Exot.* 1916. Oct. Vol. 9. No. 8. pp. 576–578.

The author describes his observations on parasites found in the fowl, the dog and the horse in Brazil. He is led to believe that the demodectic itch of the horse is contagious to man in consequence of the following case. A horse was extensively affected. A young man had attended the animal for a year, and although his face was free from comedones until he had to do with the horse, they gradually developed on the forehead and cheeks. Microscopical examination showed that the same demodex existed in scrapings taken from the skin of the horse and in the comedones removed from the man's face.

P. S. A.

Pollard (J. Mc. F.) & Johnston (J. E. L.). **Chinese Toe-Rot and Foot-Tetter.** [Correspondence].—*Lancet.* 1916. Aug. 19. p. 343.

The authors refer to a note on "Chinese Toe-rot" in the *Lancet* of June 10th, 1916,* and observe that a similar condition is fairly common in Nigeria. They have found that the most effective treatment is an antiseptic ointment rendered alkaline, e.g., Ung. hyd. nit. dil. with addition of 5 grains of soda bicarbonate to the ounce. They believe that the causative organisms only flourish in an acid medium. Cases which have withstood for years sulphur and iodine, and various antiseptic dusting powders have rapidly yielded to treatment on these lines.

P. S. A.

de Campos (Murillo). **Sobre algumas affecções cutaneas do interior do Brasil.** [Some Skin Affections of the Interior of Brazil.]—*Arch. Brasileiros de Med.* 1915. Oct. Vol. 5. No. 10. pp. 358–363.

Brief notes of certain skin diseases observed by the author in the course of a journey into the interior of Brazil in the years 1910 and 1911, mostly in Indians.

1. Guinea-worm was found to be common and, from unskilled attempts at extraction of the worm or neglect to do so, abscesses in various parts of the body with secondary inoculation of the pus by scratching frequently result. Notes are given in detail of four cases in which the consequent state of the affected individual became serious.

2. Certain pustular affections were also noted which were due to the bites of the "pium," a species of *Simulium*, and the "gunpowder mosquito," a species of *Ceratopogon*. The case is especially mentioned of a white youth who had stripped himself to the waist, while rubber-tapping, on account of the heat, with the result that the whole of the exposed surface of the body became covered by an eruption of vesicles and papules, due to the bites of these insects, which was intensified by the consequent scratching until distinct fever and general impairment of the health resulted. The patient was taken into a hospital under the belief that he was suffering from an attack of small-pox. There is a second species of *Simulium*, known as the "borrachudo," which causes similar symptoms. The author publishes his notes with a view to calling further attention to the subject.

J. B. N.

Ricono (M.). **Cases of Fibroma Molluscum and Cheloid.**—*S. African Med. Rec.* 1916. Aug. 12. Vol. 14. No. 15. pp. 228–231. With 1 plate.

The author describes and figures a case of generalised molluscum fibroma in a Basuto woman, aged 60, which illustrates the family

* "Chinese Toe-Rot" [*Lancet*, June 10th, 1916, p. 1,200]. A case described by a correspondent (R. G.) under this name was probably an example of the condition described by Cantlie in "Foot-tetter" in which he found a diplococcus easily cultivated. The skin between the toes becomes hypertrophied, peeling and leaving a tender, raw and itching surface. The soles and sides of the feet may become involved, and the condition may spread elsewhere. It is very persistent and in addition to local treatment with sulphur and boric powder the shoes must be kept disinfected.

tendency to the condition, the mother and a sister being affected with multiple fibromata of the skin. In this case they began to appear at puberty.

Two cases of cheloid are also described and figured. The one a Mosuto man aged 35 was the nephew of a chief who had a cheloid on the sternum. At least fifteen of the chief's sons and nephews had developed cheloids on various parts of the body.

The other case a Mosuto woman, with a large cheloid on the sternum and others on the face following tattoo marks.

Removal of cheloids from the lobe of the ear was successful in two cases. Fibrolysin had no effect.

P. S. A.

HEIM (Gustav). **Seltenheit des Lupus und der Psoriasis in heissen Ländern.** [Infrequency of Lupus and Psoriasis in Hot Climates.] —*Dermatol. Zeitschr.* 1916. June. Vol. 23. No. 6. pp. 357–365.

The gist of this wordy paper is that lupus vulgaris and psoriasis are rarely seen in hot climates. This was the experience of several German medical men who practised for many years in Egypt and other warm countries, and was confirmed by the author in his three years' work in South-West Africa.

He suggests that patients of means and fond of travel might seek a cure for these diseases by heliotherapy in such sunny lands.

P. S. A.